SENSE OF PLACE AND ENVIRONMENTAL STEWARDSHIP AMONG YOUNG Q'EQCHI' MAYA WOMEN OF ALTA VERAPAZ, GUATEMALA

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SENSE OF PLACE AND ENVIRONMENTAL STEWARDSHIP AMONG YOUNG Q'EQCHI' MAYA WOMEN OF ALTA VERAPAZ, GUATEMALA

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Understanding the relationship between indigenous people and the environments they inhabit is critical given that these groups often live in regions of high ecological and cultural diversity. Both forms of diversity are threatened. It is particularly important to understand the relationship between indigenous *women* and their environments given prior studies showing negative social and environmental impacts of the gender inequality experienced by women living in poor, rural regions throughout the developing world. Using multiple conceptual lenses – including sense of place, environmental stewardship, environmental education, place-based education, and positive youth development – this dissertation advances our knowledge of one understudied group: Q'eqchi' Maya women of Alta Verapaz, Guatemala. The Q'eqchi' are the predominant Maya group in Guatemala's central highlands and northern lowlands (CCFC, 2015). I place a particular emphasis on the young women who participate in an environmental education (EE) program called Women, Agroecology, and Leadership for Conservation (WALC), facilitated by the non-profit organization Community Cloud Forest Conservation (CCFC).

My initial research framework was structured around investigating whether and how WALC impacts participants' sense of place. I conducted 219 semi-structured interviews exploring: how young Q'eqchi' women conceptualize their sense of place, what types of environmental stewardship practices they engage in and the motivations behind them, as well as the pedagogical strategies and outcomes of WALC. I combined a positivist framework of pre-determined place constructs (place meanings, attachment, dependence, and identity) with qualitative methods in order to examine research participants' sense of place. My results reveal multiple place themes, particularly the dominance of place dependence. Young

Q'eqchi' Maya women depend on their place for a number of reasons, including access to cultivable land and natural resources. My research also provides theoretical and methodological insights regarding place scholarship among indigenous women. I also contribute to our understanding of young Q'eqchi' women's environmental stewardship practices and motivations, through findings that both align and diverge from prior indigenous stewardship research. Young Q'eqchi' women engage in stewardship practices such as tree-planting and collecting garbage, motivated by factors such as subsistence-based needs. However, research suggests that collectively, the Q'eqchi' often use resources unsustainably. Finally, in examining the impacts of WALC, I explore how EE programs that incorporate elements of place-based education (PBE) and positive youth development (PYD) can contribute to EE outcomes, by bolstering participant knowledge, skills, and confidence. I propose a theoretical framework integrating PBE and PYD, and describe how my research has broader implications for EE in both developing and developed countries.

BIOGRAPHICAL SKETCH

Lilly Briggs was born to Canadian parents in Bangkok, Thailand in 1983, and spent the first thirteen years of her life moving between Asia and Canada. Her diplomatic father was posted not only to Thailand, but to Taiwan, China, and South Korea as well. When Lilly's family was on a posting home to Canada, they lived in Chelsea, Quebec, not far from Ottawa. It was in Chelsea that Lilly first developed her love of nature, animals, and birds in particular. She and her younger brother freely roamed the nearby meadow and forest. Every morning Lilly and her father put bird seed out in various feeders, and before going to school Lilly would watch different bird species enjoying the buffet. At a young age, Lilly also became interested in environmental activism. Her mother encouraged this interest by helping her organize an environmental group at International School Beijing, and by getting her books like *50 Things Kids Can Do to Save the Planet*. Lilly organized environmental education events and environmental clubs throughout elementary and high school.

In 1996, Lilly's father left the Canadian Foreign Service and moved the family to North Vancouver, British Columbia for a new job. Lilly later attended the University of British Columbia, before transferring to Dalhousie University in Halifax, Nova Scotia. There she earned a B.A. in International Development Studies and Environmental Studies.

Upon graduating from Dalhousie, Lilly held internship positions at different environmental non-profit organizations (ENGOs) nationally and internationally. Her first position was with the Sierra Club of Canada's head office in Ottawa. Part of the experience involved living with then-Executive Director Elizabeth May, who is now the leader of Canada's Green Party. After concluding her internship at the Sierra Club, she spent a month in the Petén region of Guatemala learning Spanish and living with a host family. Her next internship position shortly thereafter was with the Falls Brook Centre of New Brunswick. As part of the Falls Brook experience, interns spend three months living in rural New Brunswick,

followed by six months with a partner ENGO. Lilly was assigned to the Grupo Autónomo para la Investigación Ambiental (Group for Environmental Investigation) in Oaxaca, Mexico.

In September 2007 Lilly began her Masters of Environmental Studies (MES) at York University in Toronto, Ontario. Before the first semester, Lilly read *Silence of the Songbirds* by Dr. Bridget Stutchbury. This book inspired Lilly to focus her MES degree on songbirds, environmental education (EE), and Latin America. Lilly introduced herself to Bridget, a York professor, and arranged an independent study course with her. The following summer, Lilly worked as a field assistant for Bridget's husband, Dr. Eugene Morton, helping him with the Blue-Headed Vireo research he was conducting at their study site in Pennsylvania.

During a drive back to Toronto with Stutchbury, Lilly learned about BirdSleuth, a bird-focused EE and citizen science curriculum developed by the Cornell Lab of Ornithology. Lilly was particularly interested to learn that this curriculum was only available in North America, and decided to find out if her MES project could involve field-testing the first Spanish version of the curriculum. Bridget provided the contact information for Jennifer Fee, BirdSleuth Project Leader, who responded to Lilly's inquiring email with interest. Lilly conducted the first international field-test of BirdSleuth in Puerto Viejo de Sarapiquí, Costa Rica in 2009, and has been helping to build the BirdSleuth-International program ever since. She has been working with Jennifer as well as Dr. Nancy Trautmann, Director of Education at the Lab. Nancy encouraged Lilly to apply to Cornell, and introduced her to Dr. Marianne Krasny in the Department of Natural Resources, who agreed to take Lilly on as a student. Dr. Richard Stedman became a co-chair with Marianne, and Lilly was very fortunate to have her doctoral work guided by experts in EE (Marianne) and sense of place (Rich) scholarship.

Lilly stayed involved in building the BirdSleuth-International program between graduating from York in 2009 and starting her PhD in the DNR in January 2011. During this time, she also worked on EE initiatives at an ENGO in Toronto called Learning for a

Sustainable Future. Throughout her PhD, Lilly organized and delivered BirdSleuth-International workshops to train formal and informal educators in the use of the curriculum and in citizen science participation around eBird in multiple countries, including Costa Rica, Mexico, Guatemala, Belize, Peru, Nicaragua, and Colombia.

It was fortuitous that Lilly returned to Guatemala. She facilitated a workshop near Cobán, Alta Verapaz in April 2013 in collaboration with Rob and Tara Cahill of Community Cloud Forest Conservation (CCFC). After the workshop she learned of the organization's inspiring work with young Q'eqchi' Maya women involving EE and environmental stewardship initiatives. This motivated Lilly's decision to conduct her doctoral research with CCFC during the fall of 2013 and 2014. The seven months spent in Guatemala working with CCFC and Q'eqchi' communities were educationally and personally transformative.

Upon graduating, Lilly starts a postdoctoral position in the Education Program at the Cornell Lab of Ornithology. She looks forward to continuing her involvement in expanding the Lab's EE initiatives internationally, and to conducting further research in Latin America.

This work is dedicated to the young Q'eqchi' Maya women of Alta Verapaz, Guatemala

ACKNOWLEDGEMENTS

I thank my committee co-chairs, Drs. Marianne Krasny and Richard Stedman, from both an academic and personal standpoint. They invested many, *many* hours reviewing my work, continuously pushed me beyond what I thought were my own limits to become a better writer and scholar, and were always available when I needed their insightful academic and professional guidance. I have learned so much from both of them over the years, and have been inspired by their dedication to their scholarship, their students, and to making the world a better place. I felt supported by them as I navigated not only the PhD journey but other aspects of life. They were both incredibly kind and supportive when my personal road became rocky. I enjoyed showing Marianne different civic ecology projects taking place in Toronto, and watching playoff hockey games with Rich. I look forward to continuing collaborations with them in the future as colleagues and friends.

I am grateful for the people I work with at the Cornell Lab of Ornithology, particularly Nancy Trautmann and Jennifer Fee. Nancy has been encouraging me since before I even began the PhD. She wrote one of my Cornell recommendation letters, was involved in securing the fellowship that allowed me to begin my graduate studies, and has been a member of my committee. Jen was willing to drive from Ithaca to Toronto in September 2008 so we could meet in person for the first time, and start writing grants to support our vision of field-testing BirdSleuth in Costa Rica. Our mantra that weekend was "Dare to Dream!", and we certainly did. I have shared many memorable travel adventures with both Nancy and Jen, and am grateful for their efforts in making my future postdoctoral position at the Lab possible.

I thank the additional members of my committee, Lee Humphreys and Amanda Rodewald. Lee's qualitative research methods class was one of the best courses I took at Cornell, and prepared me well for the qualitative research I conducted, including the many interviews in the field and the many hours of coding data thereafter. I appreciate that Amanda

ensured my academic growth at Cornell included ecology and conservation biology components, and I look forward to continuing collaborations with her around work in Latin America through my postdoc. I also appreciate that she is the only member of my committee who has been to my research site in Guatemala, and knows about life on the *finca.*

I deeply appreciate the funding provided by Claudia Madrazo of the Cornell Lab of Ornithology's Administrative Board. This funding made it possible for me to enroll in doctoral study at Cornell, and to conduct my dissertation research in Guatemala. A Cornell College of Agriculture and Life Sciences Land Grant Fellowship also funded me for two years. Through this fellowship I had the opportunity to collaborate with a non-profit organization called Rocking the Boat to conduct bird-focused EE, civic ecology, and citizen science work with underserved youth in the Bronx. Funding from Katie Ray through the Cornell Lab has supported my official position as BirdSleuth-International Outreach Coordinator since the summer of 2014.

I thank Rob and Tara Cahill of CCFC, and two of their children John and Ruth, for welcoming me with open arms into both their professional world and their family. I am inspired by the work they do on behalf of young Q'eqchi' women and the environment in Alta Verapaz, Guatemala, and feel fortunate for the opportunities to collaborate with them on both my doctoral research and BirdSleuth-International projects. The Cahills went above and beyond to help me conduct my work, to provide emotional support during my time in Guatemala, and to show me some of the country's most amazing birds. I also enjoyed the adventure of living in a restored pig barn at the *finca* Rubel Chaim for my first field season.

Without the professionalism and patience of my translator Elvira Ac Macz, who translated hours upon hours of interviews from Q'eqchi' into Spanish, my research would not have been possible. We spent a great deal of time hiking together, waiting for busses together, chasing busses together, and taking busses together through beautiful, remote mountainous

villages. I will never forget our interesting conversations, our Q'eqchi-English language exchanges, and our shared laughter over many hiking/bussing adventures. *B'antiox.*

Many amazing people from Q'eqchi' Maya communities welcomed Elvira and me into their homes when we arrived unannounced at their doorstep, offering us coffee and tortillas while they answered our questions. All the young Q'eqchi' women who participated in the Women, Agroecology, and Leadership for Conservation (WALC) program inspired me on a daily basis. I will never forget times such as picking beans while singing together, and learning to make tortillas over the evening cooking fires. *B'antiox aawe' nakataatinak wikin* (thank you for speaking to me).

I am deeply grateful for friends and family across Canada, here in Ithaca, and other parts of the world. They were a constant source of support and laughter through good times and bad, and made the effort to stay in touch and visit me here. Many of my Ithaca friends are also colleagues and fellow graduate students, and I appreciate not only the countless ways they have been there for me, but our motivating academic and professional conversations as well.

Finally, I thank my mother, father, and brother from the bottom of my heart, for their love and encouragement throughout my entire life. I took the leap into this intensely challenging but equally rewarding PhD journey because of the unwavering sense of security I have always felt knowing that Mom, Dad, and Jay will be there for me no matter what challenges I face, and that they are my biggest cheerleaders in the moments of joy and success. Thank you.

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CHAPTER ONE: INTRODUCTION

The initial impetus for this study was to explore the influence of environmental education (EE) on sense of place in the Latin American context. Sense of place refers to the meanings and attachments held to a setting by an individual or group (Stedman, 2002; Tuan, 1977), with attachment often considered a combination of place dependence and place identity (Brehm et al., 2012; Kudryavtsev et al., 2012; Kyle et al., 2003; Rickard & Stedman, 2015). Increasing evidence suggests that some place meanings and attachments can have a positive influence on pro-environmental attitudes and behaviors. Thus there is growing interest among environmental education scholars and practitioners to concertedly enhance certain place meanings and promote place attachment among participants (Ardoin 2006; Farnum et al. 2005; Kudryavstev et al., 2011; Rioux 2011; Stedman 2002; Vaske & Kobrin 2001). This subject has been investigated in North American settings (c.f. Kudryavstev et al., 2011, 2012) but not in Latin America. I wanted to explore whether and how a 25-day EE program called Women, Agroecology, and Leadership for Conservation (WALC), which takes place in Alta Verapaz, Guatemala, impacts sense of place among its young female Q'eqchi' Maya participants.

I conducted my research during the fall of 2013 and 2014 in collaboration with the American non-profit organization Community Cloud Forest Conservation (CCFC), directed by Rob and Tara Cahill. CCFC aspires to prevent deforestation of the region's primary cloud forest, reduce poverty and malnutrition, and slow or reverse environmental degradation in Q'eqchi' Maya villages, through local stewardship and education initiatives and programs that engage indigenous, Latino, and/or international groups. CCFC operates under the Guatemalan-registered entity "Organización Tz'unun," and is based at an agroecology center and farm called CCFC's Ecology Center. The Ecology Center is located 40 minutes southeast of Cobán, Alta Verapaz, which is approximately four hours north of Guatemala City. Situated between the Sierra Xucaneb and Sierra Chilaxha' mountain ranges, the Center property encompasses different forest types, such as

pine oak and cloud forest, and has many agroecology plots and garden beds. It reduces waste through the use of compost toilets, and produces electricity via solar panels.

Young Q'eqchi' Maya women are CCFC's main audience, and the focus of WALC. The Q'eqchi' are the predominant Maya group in Guatemala's central highlands and northern lowlands, and the largest Maya language group in the country (CCFC, 2016). Young Q'eqchi' women often have limited or complete lack of control over their educational and reproductive choices due to pervasive patriarchy and poverty throughout Q'eqchi' communities (Kahn, 2006; Carey Jr., 2008; Carey Jr. & Torres, 2010). Oppression of women is prevalent throughout Guatemala. For example, violence against women is often justified by female acts of self-determination that do not align with the wishes of men, and "according to the criminal record, both Mayan and Ladino men beat their female partners for speaking their minds" (Carey Jr. & Torres, 2010, p. 146). Kahn (2006) describes the frequency of domestic violence specifically among Q'eqchi' Maya women, and describes how they are often denied the opportunity to receive an education. Even a Q'eqchi' man interviewed as part of this research acknowledged the gender inequality that exists in Q'eqchi' culture when asked what he does not like about his community: "I don't like… that people almost never support their daughters in studying. Many people don't give their daughters permission to study. Many people think that women are just meant to take care of the house, and that isn't right." Q'eqchi' women have historically had their marriages dictated by their fathers, and once married, they are considered the property of their husbands.

The gender inequality experienced by women contributes to high population growth rates among the Q'eqchi', which puts environmental pressures on the Guatemalan highlands. Extensive slash-and-burn agriculture in the region has led to deforestation and degradation of lands that young Q'eqchi' women and their families depend on for daily survival (Central Intelligence Agency, 2013; Renner, 2003; Rieckmann et al., 2011). These lands have been recognized for their

ecological significance in the global context, as Alta Verapaz is part of a Biodiversity Hotspot (Myers et al., 2000) and encompasses several Important Bird Areas (Eisermann & Avedaño, 2009). The region also holds cultural significance, as it is home to other Maya groups such as the Poqomchi' (Personal communication, 2015).

The interconnected social and environmental issues affecting young Q'eqchi' women informed the development of WALC's four overarching curricular streams: the life project, agroecology-nutrition, conservation biology, and environmental stewardship. The life project classes are structured around four questions: who am I, where am I, where am I going, and how will I get there? These questions create a structured process for participants to reflect on how they are embedded in and influenced by their socioecological context, and how they might overcome obstacles preventing them from pursuing autonomous decisions about education, marriage, and child-bearing. Life project classes also involve workshops led by CCFC or guest speakers about sex education and family planning; jam-making and bread-baking; and creating medicines, shampoos, and soaps out of traditional plants to help promote better health and hygiene.

Agroecology-nutrition classes are intended to benefit people, other species, and the environment. Corn has always been an important staple of the Q'eqchi' diet, but the dramatic expansion of *milpas* (corn fields) has not only caused environmental degradation, but also has resulted in decreased cultivation of nutritious traditional crops. Many Q'eqchi' children suffer from malnutrition, which affects their physical growth and mental development. The agroecology-nutrition classes explore these issues by engaging participants in activities such as: planting on level contours to prevent soil erosion; creating and using organic fertilizer to diminish dependence on chemical fertilizers and build healthy soils; collecting and preserving seeds to protect genetic diversity; practicing injection and grafting techniques on fruit trees to help families reap the benefits of fruit production more quickly; and growing vitamin-rich crops and trees in agroforestry parcels to support biodiversity and achieve a balanced diet.

The conservation biology component teaches participants about stream and forest ecology, and about the water, carbon, and nutrient cycles on a regional and global scale. Participants also learn about diverse flora and fauna found in local ecosystems. These classes dedicate special attention to bird species. Birding is facilitated on a regular basis, giving young women an opportunity to observe birds through binoculars for the first time and to use bird field guides. WALC spends several full days teaching all ten lessons from an EE curriculum developed by the Cornell Lab of Ornithology called *BirdSleuth-International: Connecting Kids Through Birds*[1], which focuses on topics such as the breeding bird life cycle, migration, bird identification, citizen science, and habitat conservation.

Finally, the environmental stewardship component examines the socioecological issues that impact participants and their families, such as overpopulation and deforestation. These classes build stewardship skills such as tree-planting, and encourage the young women to think about solutions to their local environmental challenges. For example, they can model stewardship practices for others; raise awareness among family, friends, classmates, or community members; share knowledge acquired in the program; and/or initiate community-based environmental action projects.

The young women who are invited to participate in WALC come from remote mountainous villages in areas of fragmented cloud forest, which are experiencing:

> the most extreme poverty levels, highest illiteracy rates, highest degrees of chronic malnutrition in Guatemala. The marginalized young women [in these villages] have limited access to goods and services and more limited access and opportunities for education and employment. (Pers. comm., 2016)

WALC participants can be anywhere between 11 and 29 years of age, but they must have completed sixth grade. Additionally, they cannot be married or have children of their own, for

[1]I co-authored this curriculum within the Education Program at the Cornell Lab of Ornithology, but to my knowledge, WALC participants were not aware of this fact.

two main reasons. First, because the program is intensive and serves many young women at a time, CCFC's Ecology Centre is currently unable to accommodate women with infants or young children due to limited resources. Second, in the Cahills experience, once young Q'eqchi' women marry, their husbands and/or their families do not allow them to continue their studies. Thus for now, the Cahills are prioritizing educational incentives for young women who are not yet married or mothers. However, they are also in the process developing a new iteration of the WALC program called "WALC in the Village," which aims to reach women of other ages and marital status by having former WALC participants teach program content directly within a number of different villages. (Pers. comm., 2016)

Upon completing all 25 days of the program, WALC participants receive a scholarship to support their continued education the following academic year. Their scholarship is dispersed in four installments, pending documentation from their educational institutes showing proof of attendance. Participants leave the program with a certificate of completion as well as a variety of seeds and saplings that they can plant when they return to their villages.

The overarching goals of this study are to reflect on: (1) How improving our knowledge of young Q'eqchi' women can help us understand the current social and environmental challenges they face, and the future opportunities for positive change; (2) How EE programs such as WALC, which blend PBE and PYD approaches in order to benefit young people and the environment, can address these challenges; (3) How the knowledge gained through this research can be applied to initiatives reflecting the challenges and opportunities in other rural, biologically-diverse regions of the world inhabited by indigenous groups; and (4) How the methodological approach to this study can offer insights into conducting qualitative research drawing from an interdisciplinary resource management framework among an understudied indigenous group.

The relevance of investigating an understudied indigenous population stems from the argument that "given the capacity of humans to dominate, and in many cases eradicate, other species on our planet, the importance of the relationship between people and the natural environments they inhabit cannot be overstated for biodiversity conservation" (Gorenflo et al., 2012, p. 8037). Understanding the relationship between *indigenous* people and the natural environments they inhabit is particularly important because indigenous groups often live in areas of high biodiversity. Further, some research suggests that high biological diversity is likely to persist when managed by indigenous groups (Apgar et al., 2011; Gorenflo et al., 2012; Nepstad et al., 2006).

The field of biocultural diversity – concerned with connections between social and ecological diversity and their shared threats – has identified a global overlap in the distribution of regions that exemplify high biodiversity as well as cultural/linguistic diversity, represented mostly by indigenous groups (Maffi, 2002, 2005, 2007). A study showed that globally, regions of high biodiversity are areas with greater concentrations of multiple languages, and 35 of the world's biodiversity hotspots coincide with nearly half of the Earth's languages (3,202 in total) (Gorenflo et al., 2012). One example is the strong association between indigenous language diversity and plant diversity across the world's tropical belt (Stepp et al., 2004). Alta Verapaz exemplifies the overlap of ecological and cultural diversity.

It is critical to specifically understand the relationship between indigenous *women* and the natural environments they inhabit given prior studies demonstrating that rural women throughout the developing world often face extreme gender inequality. For example, women have far less access to land (Fortmann, 2006; Lee-Smith & Trujillo, 2006) and education compared to men (Barrig, 2006; Blue, 2005; Kahn, 2006; Müller & Krawinkel, 2005). The lack of resources and education makes women dependent on their fathers and then husbands, who dictate their choices. Limited female autonomy often leads to early departure from school (if they were able to attend

classes at all), shortly followed by early marriage and childbearing. This perpetuates a cycle of large families, female dependence, and poverty. Large family sizes contribute to growing population rates, which in turn leads to increased demand for natural resources and causes other negative environmental impacts. While my dissertation does not engage deeply with the women in development (WID) literature, I acknowledge findings from this body of work.

Like WALC, my dissertation is informed by the interplay between social and environmental challenges affecting young Q'eqchi' women. Other studies have similarly explored factors both impacting and helping women in poor rural areas of developing countries, discussed environmental threats to biologically-diverse regions such as Alta Verapaz, or described Q'eqchi' Maya culture and society, but no prior work appears to integrate these themes. My research ties these three strands together using the following conceptual or theoretical lenses: sense of place, environmental stewardship, environmental education (EE), place-based education (PBE) and positive youth development (PYD). My dissertation is composed of a methods chapter (Chapter Two) and three research papers which will be later be modified and submitted to academic journals. Here I summarize each research paper's principal contributions.

Chapter Two: Methods

In this chapter I describe my epistemology, my data collection process (a qualitative purposive sampling strategy), the research context, the participants, and the data analysis. I conducted all 219 interviews in Spanish, with translation into Q'eqchi' by a Q'eqchi' woman named Elvira Ac Macz. Q'eqchi' girls and women between the ages of 11 and 29 years old represent 191 interviews, which included all first-time participants in the 2013 and 2014 WALC programs except one, while mothers and fathers of past WALC participants represent 28 interviewees. I analyzed my data using the qualitative data analysis program NVivo.

Chapter Three: Conceptualizing sense of place among young Q'eqchi' Maya women of Alta Verapaz, Guatemala

In this chapter I invoke place scholarship to examine how sense of place is manifested among young Q'eqchi' Maya women of Alta Verapaz. I use *a priori* place constructs, place research traditions, and studies of indigenous sense of place to conceptualize and analyze young Q'eqchi' women's relationship with their environmental context and sociocultural milieu. The sense of place lens has been used to explore the types of connections between people and places – in terms of how they value and bond to both the social and natural elements of a given setting (Farnum et al., 2005) – and for how understanding why they might be rooted in a place (Beckley, 2003; L.C. Manzo, 2014). Further, increasing evidence suggests that place attachments and meanings can influence place-protective behaviors such as environmental stewardship (Ardoin, 2006; Farnum et al., 2005; Kudryavtsev et al., 2011; Rioux, 2011; Vaske & Kobrin, 2001), the focus of Chapter Four. The research questions framing this paper include: 1) how do young Q'eqchi' women conceptualize their sense of place, and 2) how can indigenous sense of place be understood using the constructs place meanings, place attachment, place dependence, and place identity?

Chapter Four: Environmental stewardship practices and motivations among young Q'eqchi' Maya women of Alta Verapaz, Guatemala

Chapter Four describes young Q'eqchi' women's environmental stewardship practices and the motivations behind them. I use environmental stewardship literature, including studies about stewardship motivations among indigenous and non-indigenous groups, to frame my analysis. I examine dominant themes that emerge from a review of research covering a breadth of indigenous groups, which do not necessarily reflect all indigenous populations. For example, some studies suggest that indigenous groups are more innately inclined to steward the earth sustainably compared to non-indigenous groups as a result of their subsistence-based and spiritual connections with the environment (Appiah-Opoku, 2007; Middleton, 2013;

Prosper et al., 2011; Ross et al., 2011). Other research highlights evidence of indigenous populations engaging in resource-extractive activity that has caused dramatic environmental degradation and diversity loss (Faust & Smardon, 2001; Fennell, 2008; Hames, 1979; Krech, 1999; Low, 1996; Smith & Wishnie, 2000). My contribution addresses the research questions: 1) what types of environmental stewardship practices are common among young Q'eqchi' women, and 2) what are the underlying motivations driving these practices.

Chapter Five: Women, Agroecology, and Leadership for Conservation (WALC) – exploring place-based education and positive youth development through an environmental education program in Alta Verapaz, Guatemala

This chapter addresses two research questions about WALC: 1) what pedagogical strategies are used in the program, and 2) what are the program outcomes for participants? Although I did not find evidence that WALC influences participants' sense of place, in keeping with the initial overarching research question framing this study, I collected extensive data about the program's impacts on its young female participants. In examining the data and answering the research questions, I explore why and how EE programs might incorporate elements of both place-based education (PBE) and positive youth development (PYD), and propose a theoretical framework that integrates these literatures. PBE is often considered a form of environmental education (Orr, 1992; Sobel, 1996; Thomashow, 1995), and PYD has been increasingly applied to environmentally-oriented youth programs (Schusler & Krasny, 2010), yet their literatures have evolved separately. I also discuss how emergent themes from my study could extend EE literature and practice in other contexts.

Conclusion

Young Q'eqchi' Maya women are an understudied indigenous group living in the ecologically-significant region of Alta Verapaz, Guatemala. My research contributes to our understanding of both the people and the place through the use of multiple literatures, and

enables us to extrapolate lessons beyond this particular context. It offers theoretical and methodological insights to scholarship concerned with place, environmental stewardship, and EE. This dissertation has academic and practical applications within and beyond the remote Guatemalan highlands villages involved in the study, including in other developing world contexts.

CHAPTER TWO: METHODS

Epistemology

My research heavily, but not exclusively, reflects a constructivist/interpretivist perspective. I experimented with a mixed methods research (MMR) approach and employed a positivist framework informed by *a priori* place constructs to investigate young Q'eqchi' women's sense of place in Chapter Three. Here I will address why I privileged constructivism and qualitative methods, but why I did not adopt a "purist stance" (Lincoln & Guba, 1985) regarding epistemologies.

The constructivist/interpretivist paradigm accepts multiple legitimate understandings of reality, tied to individuals' subjective views, values, and emotions, and rejects one objective truth (Bryman, 2006). Knowledge is jointly constructed by the researcher and the people engaged in the research. The complex lived experiences of research participants must be understood from their perspective (Mertens, 1998), in terms of the specific time and context (Mayring, 2007). This paradigm strongly espouses the use of qualitative methods (Commander & Ward, 2009).

Qualitative methods were most appropriate to address the research questions, participants, and context of this study, as they allow researchers to acquire rich descriptions (Denzin & Lincoln, 2005), and conduct initial explorations to develop theory through a grounded theory approach that allows for emergent themes (Glaser & Strauss, 1967). Further, they help researchers answer questions of "how" and "why" (Malina et al., 2011; Terrell, 2012). Qualitative methods can also give a "voice to those whose views are rarely heard" (Sofaer, 1999, p. 1101). Young Q'eqchi' women are an understudied audience, and no prior academic scholarship describes their sense of place (using the framework applied here) or their environmental stewardship motivations. No previous research was conducted around the WALC program. We have limited information about the Q'eqchi' in general, and I was unable to find studies that highlight the perspectives of young Q'eqchi' women in particular.

I wanted my research to reflect the constructivist paradigm's principles by respecting the contextual, lived experiences of the Q'eqchi', giving a voice to marginalized young Q'eqchi' women, and allowing for the co-creation of knowledge with the individuals involved in this study. I intended to reflect continuously on how my Western ontology might be influencing the research process and interpretations of the data (Carter & Little, 2007). By recognizing my own subjectivity and limitations, I hoped to remain humble about the extent of my ability as a researcher from a developed country to understand a culture so different from my own, in such a short period of time. I will reflect further on these goals in the Conclusion Chapter.

I decided to experiment with MMR in my second year of data collection (2014), as MMR can enhance a researcher's ability to: draw stronger inferences and thus better understand a given subject; recognize and honor diverse perspectives; and explore multi-faceted questions that qualitative or quantitative methods alone might not adequately address (Commander & Ward, 2009; Hanson et al., 2005; Mertens, 2003; Teddlie & Tashakkori, 2003, 2009). Combining research traditions can also help a field evolve by challenging epistemological assumptions inherent to certain scholarship (Stedman & Beckley, 2007).

After the 2013 field season, I had a large body of qualitative data that I believed could inform the development of a survey. Using emergent themes from 2013 data, I created quantitative questions that could be answered with yes/no or agree/disagree/do not know. The survey still needed to be administered orally, given high illiteracy rates in the region and the impossibility of mailing surveys out in hard copy or electronically. It quickly became apparent that this method was not suitable in my study site. Research participants mostly responded with "yes" or "I agree" to all of the questions, or without my prompting would complement their answer with a deeper explanation. Without intending to, I admittedly found myself asking follow-up questions when individuals did not volunteer the information. Upon reflection I realized I was doing so because

the quantitative approach was not allowing me to address my specific research questions as well as a qualitative approach. I turned the quantitative items into qualitative questions that would elicit richer details, particularly the "how" and "why." I do not consider this detour a waste of time, as it solidified my belief that qualitative methods were most appropriate for my study, and I was still able to use the data acquired through my hybrid methodology in the analysis of all questions.

I believed that the pre-determined place constructs I applied to my investigation of young Q'eqchi' women's sense of place would be useful for several reasons. First, the constructs of meanings, attachment, dependence, and identity have been used in place scholarship conducted within the context of other natural resource-dependent audiences (Amsden, Stedman, & Kruger, 2010; Davenport & Anderson, 2005), a characteristic of the Q'eqchi' in this study. Second, literature shows the significance of symbolic place meanings (such as spirituality) to indigenous sense of place. It also appears that prior research has only examined indigenous place meanings or attachment (Greenop, 2009; Hay, 1998), but not in combination. Third, I believed these constructs would allow me to explore the symbolic *and* instrumental dimensions of individuals' feelings about place. There is theoretical uncertainty regarding the capacity of youth to be symbolic when describing a place (Drew et al., 2010), thus I wanted to give the predominantly young participants in this study the opportunity to articulate other types of thoughts and sentiments.

Research Context

The following descriptions of a Q'eqchi' family and a selection of villages, while certainly not representative of all Q'eqchi', provide a common profile of my research participants' households and communities. A Q'eqchi' family is usually large, and has between four to ten children. The homes are made of wood, and situated in the center of the family's cornfields. The size of an average corn field ranges between 8 and 20 *tareas,* which means job or task in Spanish. A *tarea* is purportedly named as such because it represents the

amount of land that one man can work in one day. In this region, a *tarea* is 20 meters by 20 meters (Pers. comm., 2016).

Generally, all siblings and any grandparents sleep in one main room of the home, while the parents sleep in a separate room, usually attached to the kitchen area. Given large family sizes and limited financial resources, it is often difficult for parents to send all of their children to school.

Agriculture is the primary occupation of the men, particularly corn and bean cultivation. The women typically remain in the household cooking, cleaning, attending to the children, and weaving as a means of gaining income for the family. Outside the home, women might work in small family-owned stores, tend to small gardens or fruit trees around the household, and sell their produce at a larger market. To add to the family food sources and income, most families also have free-range chickens, turkeys, or ducks wandering in and out of their kitchens and yards. An aggressive guard dog or two is often part of the household animal mix.

Chicoj Raxquix is a village located within a 45-minute bus ride of Cobán. The relatively easy accessibility by bus makes this village more connected to the urban center than other villages in this study. The community has an elementary and secondary school. Samac is a coffee cooperative village located approximately thirty minutes beyond Chicoj Raxquix. San Pablo Xucaneb is a village located an hour and a half bus ride in the opposite direction from Cobán. It is still quite connected to Cobán despite its more limited public transit. Most families in San Pablo Xucaneb have agricultural fields directly around their households. It has a main road in the center of town with several stores and a school. All Q'eqchi' villages appear to have a church.

Chamisún is located at a high elevation, three hours by bus from Cobán. It has a primary school and a new secondary school with multiple classes of students. Chamisún is closest to Chitix, an isolated community. From Chamisún it is necessary to hike 45-minutes down a very steep hill into the Chitix valley. Even fewer women in Chitix appear to be pursuing their education compared to other villages. The people seemed suspicious of outsiders, and were less likely to

accept a request for an interview than the members of other communities. Xalija' is another remote village; access entails more than two hours by bus from Cobán to the nearest village, from which it is necessary to hike one hour. The people did not seem to be as suspicious of outsiders as those in Chitix. The homes in Xalija' are quite dispersed, and families appear to have a lot of land to cultivate directly around their households. Xalija' has a primary school and one very small store.

Data Collection

Semi-structured interviews

My semi-structured interview guide (Appendix A) addresses the research questions of all three papers in this dissertation. It reflects scholarship described in other qualitative studies about sense of place (Davenport & Anderson, 2005; Manzo, 2005; Stedman et al., 2004), environmental stewardship (Quartuch & Beckley, 2013; Seifert & Shaw, 2013; Warburton & Gooch, 2007), and environmental education (Knapp & Poff, 2001; Rickinson, 2001; Smith-Sebasto, 2000). I explored individuals' sense of place by asking place item questions intended to explore different constructs, such as: what do you like about your village (place meanings), what do you like to do/what do you need to do in your village (place dependence), and are you comfortable being yourself in your village (place identity). To address environmental stewardship, I asked questions about the kinds of practices young Q'eqchi' women engage in, why they engage in these particular practices, why they want to help the environment in general, and how they feel about certain environmental characteristics of their villages (i.e., the presence of trees, animals, and garbage). Finally, to explore the pedagogical strategies and outcomes of WALC, I asked participants questions about what they learned in the program, who they shared their new knowledge and skills with after participating in the program, what knowledge and skills they applied on their own after participating in the program, what they liked and did not like about the program, and if applicable, why they were participating in the program again. I asked the family members of WALC alumni what their daughter or sister implemented and/or taught others after participating in the program.

Above I described how I used emergent themes from 2013 data to inform the development of a survey, which subsequently became a semi-structured interview guide. For example, in 2013 many participants spoke about planting trees or collecting garbage, so I asked directly about these practices the following year, first as a yes/no question and then as a question about *why* they plant trees or collect garbage. The interview guide does not include all follow-up questions such as "why do you think your mother has adopted the practice of creating organic compost since you taught her how to do this?" which reflect lines of inquiry that were created in the moment to dig deeper into a particular response. As Charmaz (2001) notes, "interviewing is a flexible, emergent technique; ideas and issues emerge during the interview, and the interviewer can then immediately pursue these leads" (p. 676). At times I was able to pursue an interesting line of inquiry further, while at other times logistical and time constraints prevented me from doing so.

I conducted all interviews in Spanish with translation into Q'eqchi', the first or only language of research participants. Consent to interview minors was requested orally, given the high illiteracy rates in my study site. The Cornell University Office of Research Integrity and Assurance Institution Review Board approved both the research protocol and oral consent scripts (Protocol ID# 1308004038). My translator was a Q'eqchi' woman named Elvira Ac Macz, a past WALC program participant and now one of CCFC's most valued staff members. Lofland et al. (1971) suggest that "getting permission to do an interview is... greatly expedited if you have 'connections'" (pp. 41-42). Access to and recruitment of participants was possible through my connections to CCFC, and the ability to work with Elvira. Prior to starting the fieldwork in 2013, I learned that CCFC needed Elvira to visit various villages on behalf of the organization in order to recruit participants for that year's program. She did not want to travel alone, so it was a perfect opportunity for me to accompany her. I could conduct interviews before WALC started, and reach individuals that I would not have been able to interview during the program, such as family

members and women who did not end up participating or never intended to participate. Elvira could translate for me, then share information about WALC with the appropriate individuals.

I employed a qualitative purposive sampling strategy to recruit research participants. During September and October of 2013 and 2014, Elvira and I travelled to 11 Q'eqchi' villages dispersed over a large rural mountainous area, in order to interview WALC alumni and their parents, as well as girls and women between 11 and 29 years old who had never participated in WALC. During November and December of 2013 and 2014, we interviewed all WALC participants living at the Ecology Center for the duration of the program. In total, we interviewed people from 21 villages, as some WALC participants came from communities we did not visit.

The Cahills helped me identify villages where WALC alumni and their families lived, as well as villages that WALC had no prior contact with. Trips to villages required between 2 and 10 hours of bus rides, in addition to 2 to 6 hours of hiking. We could rarely pre-arrange interviews by phone, and never by email; thus we had to find individuals in person to request an interview. In villages that Elvira was familiar with, it was easier to find the homes of WALC alumni, as Elvira might know where they lived or someone she could ask for this information. When looking for women who were eligible to participate in WALC but had never participated before, and/or had no intention of doing so in the future, the approach was to go door-to-door asking if a young woman lived there. If the answer was yes, the next step was to request an interview. In 2013, we also interviewed the family members of past WALC participants. At each household, regardless of whether or not an appropriate research subject could be interviewed, Elvira would ask for suggestions and directions to other households through a maze of corn fields, forests, and hills.

Overall, I conducted interviews with 191 Q'eqchi' women between the ages of 11 and 29, which included all participants in the 2013 and 2014 WALC programs except one (because we could not acquire oral consent from her parents). This number also includes the sisters and cousins of past WALC participants. Mothers and fathers of past participants represent 28 interviewees. I

interviewed a smaller number of fathers compared to mothers, as I usually conducted interviews during the daytime when most fathers are out working in the field. If I was able to interview a father, it was because I arrived at a household during their visit home for lunch, or because I was staying overnight in a village and could visit households in the evening when the whole family was home. Given theoretical saturation in 2013, the point at which I was unable to acquire additional data that would lead to further categories of analysis (Glaser & Strauss, 1967), I did not interview more parents in September and October of 2014. However, mothers were almost always present in the household when I interviewed their daughters – weaving, nursing babies, and/or making tortillas in the background – and might interject an occasional comment.

I sometimes interviewed two to three individuals at one time, as it was often impossible to interview anyone privately. Members of the family were usually interested in listening to the interview, and it would have been rude to ask someone to leave a room in his or her own home. To address this issue, if interviews were being conducted with two or three people at a time, I would try to vary who was asked a question first, so that one person did not overly influence others. During WALC, I could conduct private interviews with participants at the Ecology Centre at 6 am (before breakfast), and at 5:30 pm after program activities finished. Once in a while I was able to conduct interviews during the day, but the Cahills and I agreed that I should mostly avoid interviewing participants while program activities were taking place.

In 2014 I purposefully targeted villages that had never had any contact with CCFC, and in villages that *had* had prior contact with CCFC and WALC, I sought out women who had never participated in the program and/or ones who had no intention of doing so in the future. I did so in order to have a greater sample size and include a greater diversity of participants, so as to be better able to answer my research questions. To determine whether WALC influenced participants' sense of place, their stewardship practices and motivations, as well as other behaviors and perspectives, I wanted to increase the number of participants in my study who had no prior contact with WALC.

This decision was also beneficial to CCFC, as the directors are always trying to reach women who do not already know about WALC.

Participant observation

I engaged in participant observation during village visits and throughout WALC. The observations during village visits were intended to help triangulate some of the self-described stewardship practices (examined in Chapter Four) with actual behaviors. Participant observations during WALC were intended to address the pedagogical strategies and outcomes of the program (examined in Chapter Five), but were limited by the language barrier.

Informal debriefing sessions

Due to the language barrier, I tried to initiate informal debriefing sessions with Elvira, Rob, and Tara, following interviews and classes, to find out if I had missed anything noteworthy. I was not only interested in acquiring information that language made it otherwise impossible for me to obtain, but I also tried to discuss statements, interactions, or behaviors that I may have overlooked or misinterpreted due to a lack of cultural understanding and awareness. Through my informal debriefing sessions with Elvira, I attempted to ascertain whether certain interview questions were being worded appropriately. Sometimes we would reflect on the answers from interviewees. With Rob and Tara, I sought to uncover responses to the questions they posed in their classes that they thought could be of interest to my research. It is possible we had different ideas about what comments were important or not, plus I typically did not have a lot of time to undertake a lengthy discussion with them immediately after a class while it was still fresh in their minds. Other times, I would anonymously share responses to a particular interview question, in order to find out the Cahills' opinion based on their knowledge of and experiences with the Q'eqchi'.

Data Analysis

Between the field seasons of 2013 and 2014, I transcribed all 2013 interviews (111 in total) verbatim, translating from Spanish to English in the process. Using the qualitative data analysis program NVivo, I coded the data (Lofland, 1971) in order to organize, dissect, and describe it (Gubrium & Holstein, 2002). After completing fieldwork in 2014, I transcribed the remaining 108 interviews and coded all 2013 and 2014 data through several additional iterative rounds.

I used different types of coding, including initial coding, values coding, evaluation coding, and theoretical coding (Saldaña, 2009). I started with line-by-line initial coding, also known as open coding. This type of coding allows the researcher to break down his or her data into discrete parts and examine these parts for crosscutting similarities and differences, while still remaining open to different theoretical directions (Charmaz, 2006). Much of the initial coding reflected values coding, which describes participants' values, attitudes, perspectives, and experiences. Evaluation coding also emerged, which allows the researcher to examine changes in knowledge, skills, and feelings as the result of a program. Theoretical coding, also known as selective coding, allows the researcher to make systematic linkages between categories and subcategories, and is a common final step toward grounded theory. Although the large majority of my codes were emergent, I did use the aforementioned *a priori* place constructs as initial overarching categories which in turn informed the development of many sense of place-related subcategories and codes (Saldaña, 2009).

I included all young Q'eqchi' women (191 subjects) in the analyses addressing each of my research questions in every chapter. With respect to Chapter Five (concerned with WALC's pedagogical strategies and outcomes), mothers and fathers (28 subjects) also contributed to the analysis. Parents could address the knowledge/skills their daughters taught them after WALC, and young women who had never attended WALC could shed light into the knowledge/skills or perspectives they might not have compared to those who had participated in WALC.

Table 1: Research participants in 2013

2013 research participants	Number		Villages represented
First-time WALC participants interviewed during 2013 program	39*		Caquipec, Chamisún, Chicoj Raxquix, Granadilla, Mestela, Samac, San Lucas, San Pablo Xucaneb, Santo Domingo, Sequila
Past WALC participants	44		Chicoj Raxquix, Chirrubiquin, Chirrixpec Sacranix, Sacquil, Samac, Santo Domingo, San Pablo Xucaneb, Sacrab, Sequila
Family members of past WALC participants (28)	20	Mothers	Mestela, Sacquil, Samac, San Pablo Xucaneb, Sebob
	8	Fathers	
Total	111		

*Sisters and cousins of past WALC participants are included in this number

Table 2: Research participants in 2014

2014 research participants	Number	Villages represented
Past WALC participants	37	Caquipec, Chamisún, Chicoj Raxquix, Granadill Mestela, Samac, San Lucas, Sequila, Sebob, Secochoy, San Marcos, San Pablo Xucaneb, San Domingo
Women who had never participated in WALC and did not intend to (except 1)	39	Chamisún, Chicoj Raxquix, Chitix, San Pablo Xucaneb, Samac, Santo Domingo, Sebob, Xalija'
First-time WALC participants interviewed during 2014 program	31	Casería Sesarb, Caquipec, Chamisún, Chitix, Granadilla, San Lucas, San Luis Po Paa, San Marcos, San Pablo, Xucaneb, Santo Doming Santo Tomas, Sebob, Sequila,
First-time WALC participant (only participated in pre-WALC leadership training)	1	Chamisún
Total	108	

CHAPTER THREE: CONCEPTUALIZING SENSE OF PLACE AMONG YOUNG Q'EQCHI' MAYA WOMEN OF ALTA VERAPAZ, GUATEMALA

Introduction

The Q'eqchi' Maya living throughout the remote, mountainous, highlands of Alta Verapaz, Guatemala face ecological degradation, poverty, and limited education, among other social and environmental issues. In this contribution, I explore how young Q'eqchi' women conceptualize their sense of place, and discuss how this concept is relevant to an understanding of both the causes and potential solutions to these challenges. Sense of place refers to the attachments and meanings held to a setting by an individual or group (Stedman, 2002; Tuan, 1977), and increasing evidence suggests that these attachments and meanings can influence place-protective behaviors such as environmental stewardship (Ardoin, 2006; Farnum et al., 2005; Kudryavtsev et al., 2011; Rioux, 2011; Vaske & Kobrin, 2001). Place scholarship also sheds light into the reasons why many people stay in places (Beckley, 2003; Manzo, 2014). Here I will examine how such theory and research emerging from the sense of place realm can have important implications for our understanding of an understudied indigenous group.

The goal of my research was to investigate how place attachments and meanings are manifested among young Q'eqchi' women. Place attachment represents the affective dimension of an individual's sense of place, or their emotional connection with a place (Altman & Low, 1992). It is often considered a combination of two constructs: place dependence and place identity (Brehm et al., 2012; Kudryavtsev et al., 2012; Rickard & Stedman, 2015). Place dependence refers to how an individual or group values a place for its ability to facilitate favorite activities or satisfy particular needs (Stokols & Shumaker, 1981), whereas place identity reflects the influence of a place on an individual's sense of self (Proshansky et al., 1983). Place meanings represent the cognitive dimension of an individual's sense of place. In contrast to the evaluative nature of place attachment, place meanings emerge in the descriptions and symbolic importance that an individual or group ascribes to a place (Davenport & Anderson, 2005; Stedman, 2008). They have been

conflated with sense of place (Farnum et al., 2005), when instead they *contribute* to sense of place (Greider & Garkovich, 1994; Hummon, 1992; Williams & Stewart, 1998).

I employed a positivist framework of *a prior* place constructs in combination with qualitative methods in order to answer the following research questions: 1) how do young Q'eqchi' women conceptualize their sense of place? and 2) how can indigenous sense of place be understood using the constructs place meanings, place attachment, place dependence, and place identity? Prior research focused on indigenous sense of place has often been conducted by anthropologists and cultural geographers through narrative inquiry, and I was interested in examining how my methodological approach might yield different results. I will first discuss the place constructs included in my framework, as well as the debate in place scholarship concerning epistemology and methods. My lengthier treatment of place attachment compared to meanings reflects the neglect of research on the latter (Stedman, 2008), and the dominance of dependence themes in my own data. I will examine how my findings could have environmental and social implications for Q'eqchi' villages, regarding biodiversity, strife over natural resource management and land use, as well as the future education, social elevation, and mobility opportunities of young Q'eqchi' women. I hope that this examination and my subsequent recommendations can benefit Q'eqchi' communities and the environments they inhabit, as discussed in the Conclusion Chapter. Finally, I reflect on methodological insights I can offer to place scholarship broadly as a result of mixing epistemologies in an exploration of indigenous sense of place.

Place theory

Place attachment

I place greater emphasis on the negative side of place attachment compared to the positive because prior knowledge of my research subjects suggested that several themes from the negative attachment literature would be relevant to understanding young Q'eqchi' women's sense of place, including gender, rural areas, and poverty (Beckley, 2003; Brodsky, 1996; Brown, 1992; Chawla, 1992; Fried, 2000; Manzo & Devine-Wright, 2014; Tidball & Stedman, 2013). Further, positive emotions associated with place attachment have historically received more attention than negative ones (Manzo, 2014; Trentelman, 2009), despite the fact that not everyone is attached to a place because of good experiences. The "shadow side" of people's place attachments include the "frustrating or frightening places" (Chawla, 1992). The home, for example, is often idealized as a happy, safe environment, yet feminist place literature has drawn attention to domestic violence and oppression (Ahrentzen, 1992; Anthony, 1997; Manzo, 2003). In a study of two rural Australian communities, teenagers felt torn between staying where they felt they belonged as opposed to pursuing better job opportunities outside of their towns. Middle-age citizens felt obliged to stay because of their long-term ties and need to care for elderly family members, rather than retiring to a more desirable, amenity-based town (Pretty et al., 2003). In Manzo's (2014) examination of people living in social housing, research subjects describe how members of their community are supportive of each other in, and how being in that place helps them keep their families together while working through problems. However, people acknowledge that such low-income environments face crime and other challenges, and describe the stigmatization attached to living in social housing. Thus their place attachment represents a mix of positive and negative feelings. Manzo (2005, 2015) argues that place scholarship must better balance attention given to positive place attachment with examinations of mixed and negative emotions about place.

Beckley (2003) conceptualizes the different dimensions of place attachment using the terms "magnets" and "anchors." Sociocultural and ecological qualities that draw, connect, and attach

people to place are the magnets. Sociocultural magnets include social ties, networks, and institutions, as well as appealing attributes of the built environment such as architecture. Green spaces, scenic vistas, access to natural recreation sites, and landscape features such as mountains and rivers, are ecological magnets. Anchors represent negative factors – such as lower class and economic status, unequal power structures, and family dynamics – that can prevent people from leaving a place where they are unhappy due to unemployment, poverty, or emotionally and/or physically unhealthy relationships. Beckley (2003) argues that anchors could be another means of understanding how and why individuals are attached to place, but in a negative way.

Place dependence

Place dependence often conveys a positive relationship between an individual or group and a given place that satisfies their instrumental or recreational needs. In resource-based communities, place dependence has been viewed as negative because the heavy reliance of their economies on commodities such as lumber can contribute to poverty and a lack of resilience to rapid social and/or environmental changes. However, the concept of "positive dependency" acknowledges how dependence can result in confidence, faith, and motivations to engage in "individual and collective action that repair and/or enhance valued attributes of place" (Tidball & Stedman, 2013, p. 297). Here I will use the terms positive and negative place dependence to characterize different themes that emerged in my data. Q'eqchi' communities in Alta Verapaz are resource-dependent and impoverished, but young Q'eqchi' women's place dependence also appears to be a motivation behind their environmental stewardship behaviors (as will be discussed in Chapter Four), representing positive dependency.

Place identity

Place identity requires an understanding of the physical and social characteristics of a particular place, as people are influenced by both dimensions and may define themselves in terms of belonging to a given place because of its particular mix of attributes (Hernández et al., 2007; Proshansky et al., 1983; Stokols & Shumaker, 1981). Social constructionists critique the place identity concept and place scholarship at large for its individualistic unit of analysis. They argue that place identity and meanings are constructed through interactions and relationships with others, shared language and icons, and other collective social processes (Bernardo & Palma-Oliveira, 2012, 2016; Dixon & Durrheim, 2000; Stokowski, 2002).

Place meanings

Places hold a variety of symbolic meanings that differ among individuals and groups (Lynch, 1960), and debate exists about whether place meanings are more reflective of the social or biophysical dimensions of a particular spatial setting, or if both hold equal weight. Increasing empirical work underscores the significance of landscape characteristics in individuals' place meanings (Beckley et al., 2007; Stedman et al., 2004; Stedman, 2003). The term "ecological place meaning" has been defined as the "extent to which ecosystem-related phenomena are viewed as valued or important characteristics of places" (Russ et al., 2015, p. 74). Others have argued that human perceptions of physical or sociocultural aspects of place are all socially constructed, thus the relative importance of physical place meanings is minimized (Freudenburg et al., 1995; Greider & Garkovich, 1994; Stokowski, 2002).

Phenomenological versus positivist approaches to place scholarship

A salient debate in place scholarship concerns phenomenological versus positivist epistemology (Trentelman, 2009; Stedman & Beckley, 2007). The former rejects the separation of observers from subjects and avoids hypothesis-testing based on *a priori* theory and concepts. It builds theory through qualitative methods such as semi-structured interviews that do not impose researchers' categories on participants, giving them an opportunity to answer questions thoroughly. This produces rich data, which allows the researcher to achieve a detailed and holistic understanding of the lived experiences of individuals or groups in particular settings (Seamon, 2000; Williams & Patterson, 2007). Phenomenological place scholars argue that you cannot reduce the dimensions of individuals' sense of place into broad, quantifiable categories, or systematically determine the cause and effect of people's relationship with place. One must instead search for commonalities between phenomena and places through descriptive works (Hall, 2004; Seamon, 1987; Williams & Patterson, 2007).

Positivist place scholars critique the phenomenological tradition for not producing generalizable principles, for using "fuzzy" definitions (Lalli, 1992), and for lacking construct clarity and hypothesis testing. They argue that sense of place *can* be studied through quantitative methods based on testable hypotheses, and that it is possible to consider causal relationships and the influence of variables on individuals' sense of place. Hypotheses can be derived from the knowledge afforded by phenomenological approaches, and can inform the development of precise concepts and constructs, as well as scales and codes (Beckley et al., 2007; Jorgensen & Stedman, 2001; Stedman, 2002; Trentelman, 2009). Although phenomenological scholars believe that such approaches sacrifice data richness by prioritizing simplicity, positivists counter that richness is inevitably sacrificed in both quantitative *and* qualitative research, as only a small portion of data can be shared within the confines of a journal-length article. Even if researchers have different definitions for and approaches to

studying a given subject, "all truths are partial truths, and should be judged on their ability to provide useful insights and to inform other approaches" (Stedman & Beckley, 2007, p. 942).

Indigenous sense of place

I move now from place scholarship broadly to a review of sense of place research among indigenous groups. I present findings that have been elucidated through anthropological, cultural geographer, and narrative ethnographical lenses. Similar to non-indigenous groups, spirituality, social ties, and natural landscape components are important to the formation of sense of place among many indigenous groups, though spirituality appears to be especially salient (Cajete, 2000; Colding & Folke, 2001; Greenop, 2009; Kawamura, 2004; Kearney & Bradley, 2009; Read et al., 2010; Semken, 2005; Watson & Huntington, 2008). Many indigenous peoples have strong connections to spiritual worlds which in turn influence their interactions with the natural environment (Colding & Folke, 2001; Kawamura, 2004; Silvius, 2004). Habitat and resource taboos dictate appropriate locations for hunting activity in a given landscape, as well as sites that must be avoided. For example, a forest might be sacred because it is occupied by various deities, and therefore not to be disturbed. This regulation of sites holding spiritual significance is a predominant manifestation of sense of place among indigenous groups (Read et al., 2010).

In addition to spirituality, indigenous sense of place is related to social ties (Greenop, 2009). The Yolngu of Australia are attached to their landscape because of daily kinship relations and interactions, and "the routine doings… make up Yolngu place" (Verran, as cited in Watson & Huntington, 2008, p. 274). In Yanyuwa culture, another Australian aboriginal group, the emotional bond between individuals and the ancestors who lived in the same place contributes to their place attachment. The Yanyuwa must fight to maintain their place attachment:

> …by keeping strong emotional and conceptual links to place in the face of physical exile…By virtue of their identities Yanyuwa people remember their homelands, the status and Law attached to place. In doing so they perpetually re-inscribe a social memory to place and infuse the place name with a wealth of meaning that is equal parts drawn from the stories of the 'old people' and today's affective and political consciousness. (Kearney & Bradley, 2009, p. 89)

Sense of place among the Maori of New Zealand is also grounded in ancestral and social ties (Hay, 1998). In research focused on the Koyukons of Alaska, an individual who served as both a research subject and a researcher describes the need to live where he does as opposed to somewhere physically or biogeographically similar because he needs the stories embedded in specific places to teach his sons the traditions and practices of his people. He explains how his people can only understand themselves with respect to familial stories that are linked to the places their ancestors have inhabited for centuries (Watson & Huntington, 2008).

The influence of natural landscape components on indigenous sense of place is manifested in indigenous spiritual worldviews as well as in stories that have been passed down through generations. Cajete (2000) describes how "Indigenous people traditionally perceive themselves as embedded in a web of dynamic and mutually-respectful relationships among all of the natural features and phenomena of their homelands" (as cited in Semken, 2005, p. 149). The Apache use named features of their surroundings as reminders of stories about appropriate ethical conduct. The Ndee people of Arizona have important allegorical stories, retold for counselling and teaching purposes, tied to the places they occurred (Basso, 1996). The importance of landscape components in the formation of indigenous sense of place has also emerged in place-based science education research. In an investigation of children's perceptions of science, Diné children were asked to draw what they imagined a scientist to be. The majority of them drew scientists at work outdoors, in a landscape familiar to them (the Colorado Plateau). Such representations of their homeland were interpreted as strong place attachment by Monhardt (2003), who compared them to the common depictions of scientists by non-indigenous children of men in white coats working in laboratories (Barman, 1999).

Q'eqchi' and place

Limited literature describes the Q'eqchi'. In order to examine the potential gaps my own data fill, here I synthesize the literature that is available in combination with knowledge gained from key research informants – Rob and Tara Cahill, who have worked with the Q'eqchi communities of Alta Verapaz in different capacities for over 15 years. The Q'eqchi' are the predominant Maya group in the central highlands and northern lowlands of Guatemala, and Q'eqchi' is the largest Maya language group in Guatemala (CCFC, 2016). All sources emphasize that spiritual cosmovision plays an important role in the Q'eqchi's relationship to their place (Hatse & De Ceuster, 2001, 2004). Cosmovision refers to how a given cultural group views the structure and order of the cosmos, including its creation, its future, and the relationships between all its components (Hatse & De Ceuster, 2004). Corn is at the heart of cosmovision among all Maya groups:

> The Maize god was the most important Maya deity. As the chief god of creation, he erected the world tree that provided the universe with its structure and sacrificed his own blood to infuse the universe with life force. Killed by the lords of the underworld, the Maize god was resurrected by his sons, the Hero Twins; this created a path of resurrection for the human soul. The Maya saw the appearance of maize each spring as a metaphor for resurrection, and likened the Maize god's bones to seeds from which the revived soul sprouted. (Boston Museum of Fine Art, 2014)

Corn still dominates multiple realms of the Q'eqchi's universe today. It is a staple of the Q'eqchi' diet. Multiple words for corn exist in Q'eqchi' (Pers. comm., 2015), just as multiple words for snow exist in the Inuit language (Maffi, 2005). The Q'eqchi' word for village – *ka'alebal* – means "place of the corn field." Many Q'eqchi' beliefs and rituals are related to corn, and the cultivation of corn is considered an important aspect of family tradition and duty:

> Andres, a 20-year-old catechist from Chisec [Q'eqchi' village] discusses the dilemma of parents whose sons and daughters do not wish to continue to live in the village practicing traditional maize agriculture. Parents hesitate to leave land to their children when they doubt their intention to till the land. Possession of the land is inherently provisional and culturally legitimate only when used to sustain one's family. The

> nominalization *roxloq'inkil li na'ajej* "respect/honor the place" references the norm of inheriting one's parents' land to till it and preserve family possession of it. It cannot be sold, much less to outsiders, and may be inherited to relatives as long as they continue to honor the tzuul taq'a and to participate in communal works in the village. (Romero, 2012, p. 12)

The Q'eqchi' express their understanding of the universe through agricultural practices related to corn as well as other crops. They maintain a sustainable and harmonious relationship with their environment through the spiritual beliefs and rituals associated with agriculture. Agriculture allows them to situate and understand themselves within the cosmos. For the Q'eqchi, the Earth gives life, thus a person's relationship with nature, the mountains, and the valleys should be one of respect (Hatse & De Ceuster, 2001). These beliefs translate into agricultural and resource-extractive practices that have both religious and functional dimensions which mutually reinforce each other. For example, the Q'eqchi' ask permission of Tzuultaaqaa (Tzul-taka), a Mayan deity inhabiting the hills, and/or the Judeo-Christian God, each time they use the earth, whether to cultivate corn or to initiate the construction of a new building by staking wood in the ground (Pers. comm., 2015).

Planting rituals reflect the lack of separation between spirituality and science in Q'eqchi' worldviews. In order to create optimal physical conditions for the germination of corn seed, the Q'eqchi' bury the seed deep with a special planting stick. This technique is efficient from an agricultural perspective, as well as symbolic of the fact that all living beings must pass through the underworld in order for life to be renewed, thus completing the full cycle of life and death. Yucca is another important crop, served to the ancestors on the Day of the Saints. Cultivating yucca has spiritual significance, and distributes the risk of crop failure by adding diversity to an agricultural plot. Planting *malanga* (sweet potato) during a new moon also honors religious beliefs and practical approaches to cultivation. Q'eqchi' view the waning crescent moon as the best time to plant certain crops, both because more rain falls at

this time, and because the legend of the Hummingbird and the Moon suggests that the time when "the moon sleeps" (Hatse & De Ceuster, 2004, p. 31) is the best time for fertilization.

Q'eqchi' cosmovision first began to erode during the Spanish conquest, which began in the 1500s. Important Maya texts were burned and spiritual and intellectual leaders were killed. During Guatemala's recent civil war, which lasted between 1960 and 1996 (The Center for Justice and Accountability, 2016), Q'eqchi' elders and leaders were also targeted. Other factors that have been identified as diminishing the Q'eqchi's spiritual worldviews include modern technology, evangelical churches, and development projects. Many young people are not interested in learning about the traditional beliefs and rituals. The decreasing connection between the Q'eqchi' and their cosmovision is in turn diluting their cultural identity (Hatse & De Ceuster, 2001).

Research Questions

The research questions addressed by this contribution are:

(1) How do young Q'eqchi' women conceptualize their sense of place?

(2) How can sense of place among young indigenous women be understood using the constructs place meanings, place attachment, place dependence, and place identity?

Findings

The following passages present the data concerning young Q'eqchi' women's place attachments (explored through place dependence and identity) as well as their social and ecological place meanings. To illustrate my findings, I use the voices of many research participants. Given that participants often provided similar responses regarding their place, the quotes below represent a large swathe of individuals. Through positive and negative themes, dependence emerged as the dominant dimension of young Q'eqchi' women's sense of place.

Individuals discussed their identity in relation to their place, and described tangible and intangible social place meanings. Research participants also acknowledged that natural resources available in their village not only have instrumental value, but intrinsic meaning as well, which I conceptualize as ecological place meanings.

Place dependence

Positive place dependence

Young Q'eqchi' women depend on soil, trees, and water on a daily basis. Positive dependence themes included individuals expressing appreciation for how their village addresses their subsistence-based needs, by affording them access to natural resources, a means of providing for themselves and their families, a means of achieving an income through cultivation, a means of achieving self-sufficient survival, and a means of achieving an income through natural resources. They also enjoy time spent planting crops or trees. First, healthy, viable soil is needed to plant their staple crops, like corn and bean, thus my data underscores that numerous young women appreciate having access to cultivable land in their village:

> *I like that in my village you can plant milpas* (corn).
>
> *I think what we like best in our village is our space for planting, we can plant a diversity of crops.*

Access to land allows young Q'eqchi' women and their families to raise domestic animals, another form of food security:

> (Are there other things you like about your village besides the ability to plant?) *I also like that here I can raise my domestic animals like turkey, pigs, and cows.*

Individuals described the importance of being able to cultivate so as to be able to provide for themselves and their families:

> *I like my community because there you can plant a variety of crops that my family can eat.*

People spoke of the economic income attached to cultivation. Not only does growing their own food save their family money, but they can sell a portion of their harvest at local markets in order to earn money. Agriculture is the most common employment throughout all the villages

represented in my study, and was described as a reliable source of income compared to other work. While men tend to do most of the planting, women said it could be a good income source for them, too:

> *I like it* (the ability to cultivate) *because we don't always have money to buy everything, so… we can find and harvest all of our own food. Everything that's here I like. Because here I can harvest corn, bean, pacaya, and everything that grows here in our land, I like everything. That's why I love this place.* (Why do you like that you can plant everything here?) *I like all of that because it's helped me live in my family and earn some money as well, because if I don't plant anything how I will I live? It's necessary to plant everything and that way I can have food daily. I learned that idea as a little girl, my parents always taught me about planting, and I taught my children as well.*
>
> *I have harvested hojas de mosh, malanga, fruit trees, so when we don't have money we can sell and in that way have some money. Now weaving doesn't earn much money, so there are many people weaving but it doesn't earn much money. The only thing we can work on is the planting.*

The ability to cultivate the land makes people feel self-sufficient. They expressed that they would not want to live anywhere else, especially not in an urban area, because they might not be able to plant:

> (But ultimately you want to live in your community, where you were born?) *Yes.* (And why?) *Because here I can also plant, in town I can't have anything besides my house, I couldn't cultivate, I couldn't plant corn, nothing. Here we know how to cultivate.* (So it's very important to you that you can plant and cultivate?) *Yes.*

A few women who had moved to a new village as a result of marriage explained that they missed their old village because there they had access to a larger cultivable area.

Young Q'eqchi' women depend on their villages for access to natural resources such as trees and water. For example, they appreciate the ability to access the necessary firewood for their cooking fires:

> (What things do you like best about your community?) *I like the trees in my community… We use firewood to make food or to cook. Here my family and my community we use trees most for firewood… We use that a lot.*

Young Q'eqchi' women also value the presence of trees in their communities because it allows their families to build homes and household furniture:

It's very important to have trees because we use trees a lot to build houses, for firewood… trees have a lot of utility in life.

In addition to soil and trees, young Q'eqchi' women rely on their villages for access to water that serves a variety of daily uses, including consumption, bathing, and for cleaning the household, clothes, and dishes. The Q'eqchi' acquire water locally, thus if their sources dry up they have limited alternatives for meeting their needs:

We use water to consume and to clean and wash clothes.

They say that having access to trees and water helps them save or earn money compared to those who live in town:

I would miss firewood because if there is no firewood, one cannot eat. Even if one has money, you can't eat. You have to go to town and buy gas, and it's very expensive.

I think that there we avoid spending money, because we have springs there, and we don't have to spend money for that, if we spend money it's for other things for the family. It's for that reason that we are still protecting our forest to always have those natural riches that we have there. If we stop cutting down all the trees, they will dry up one day and we will be buying potable water like the others who are.

Others describe how people use trees in order to earn an income:

Many times people cut down trees for a lack of money as well. When people don't have money what they do is cut down trees, to be able to transport them to town to sell them.

I just see some people that cut down trees to convert them to boards to sell them. Sometimes they also look for firewood and sell firewood.

Finally, when asked what they *like* to do in their village, participants spoke of planting, either crops or trees:

I think I like to plant trees and other crops that I can have there in my village.

Negative place dependence

The examples presented above suggest that young Q'eqchi' women and their families lead a traditional way of life, and enjoy it. However, in addition to describing positive qualities of their villages, participants also spoke about untenable aspects. They explained the different ways that

their traditional lifestyle does not allow them to live as well as they say they would like to live, and suggest that they are surviving, but not thriving. Young Q'eqchi' women have a negative dependence on place when they struggle with a lack of cultivable land; challenges cultivating crops; limited income-earning power related to working the land; and diminishing natural resources in their communities. A mother and her daughter explained:

> *Here it is more beautiful to live because we have ample space to plant, but there in Santo Domingo she* (her daughter) *can't plant things she wants like malanga and huisquil and other things that you can consume in the family.* (Are there other things you can tell me about what you like or don't like?) *Daughter: It's the same as what my mother said that there I can't plant, we have a very small space and it is difficult to plant.*
>
> (What are the things you like to do that you can't do here?) *For example, here there aren't jobs. There isn't enough space to plant here so we have to go to other places.*

Further, cultivation can involve financial and logistical challenges, such as input costs and the difficulty of growing certain crops:

> *I like planting, but the problem is that all of the planting requires a financial investment, or time, or needs money. It depends whether or not the money covers, whether I plant lots of things. I have always liked that, planting a diversity of crops, but it depends on the money. Sometimes we need organic fertilizer, and sometimes we don't have it, so sometimes it is impossible.*
>
> *I think that working the earth is a blessing for me, and through it, I could have a source of income. But it is difficult here, and I don't know why.*

For all the effort invested in cultivation, people might gain minimal returns from sales:

> *I don't like that at times we harvest lots of things and sell them in the market for a low price. It is difficult, because we can't sell them, so they don't bring us lots of benefits.*

Young Q'eqchi' women are worried about the diminishing natural resources in their villages, and what the loss of these resources means for their ability to continue living in their place:

> *Here in the community there is a lot of cutting down of trees and sometimes they use chainsaws. Before there were more forests, there were more trees. And now we can see that there is nothing.*

They are aware of the fact that a simultaneous decrease in resources, combined with an increase in population, means families do not always have enough:

> *In our community, as you can see, the majority of the natural resources are almost all used up. There are many families here, and when there are more families, sometimes the resources don't cover everyone.*

They lament the fact that community members are not be aware of such issues, or do not care:

> *But there are also many people who don't care about this* (the environment). *In my family…we appreciate everything in the forest, everything that lives in the forest, we appreciate it a lot, there are those who don't have a conscience and they cut down lots of trees. This is a problem for the whole community, and they have difficulty accepting the reality that respecting the forest is something we should always do.*

Place identity

Positive place identity

When participants were asked why their village is important to them, the best place for them, or a place they would miss, they often spoke of being used to living there:

> *I think I am very accustomed to living there, so I think it is the best place.*

It is possible that this response to the place identity-focused questions reflects young Q'eqchi' women's comfort with their place given that they do not know anywhere else. However, it could be their way of expressing that their identity is embedded in a familiar place, making it feel like the "best place" to be.

When individuals were asked if they feel comfortable being themselves in their village, they said they do feel they can act like themselves in the place they live:

> *I think so because it's the place where I live and I can act like I want.*

> *I can be very comfortable in my village because I am a participatory person and it's very beautiful to be there with all of the people, and nobody can criticize me, or tell me not to do everything that I want. I think that I can be how I want to be there.*

Negative place identity

Along with these positive statements about place, participants broached the issue of jealousy among village members, and remarked that this is common to Q'eqchi' communities. People described how this makes them feel uncomfortable acting like themselves, and less confident pursuing the choices that they feel are best for them. They spoke of the fact that

members of their village would be driven to adverse behaviors as a result of envy over the success of others. This can be problematic for individuals or families who are trying to *salir adelante* ("get ahead") and achieve a better life. People spread gossip about girls who are pursuing their education – for example, by saying that they were going to school just to "find a boyfriend" and "get into trouble"– or criticize them:

> *In some cases, yes, because not all the times I can be comfortable, because people sometimes are envious among themselves, so sometimes you can't really be yourself. They are the ones who don't want to do anything themselves, which causes envy.*
>
> *Not all the time can I be comfortable in my village, because I am a student, and many people… since I am the only one studying many people criticize me and say bad things to me, and I don't think it's good what they do. Instead of criticizing me or saying bad things about me they should learn from the example I am giving. They should also study, and all of us should study, because people need to learn many things. Education is best for the people who live in my community, so I don't think it's good what they do.*

Families that are trying to earn an extra income by raising domestic fowl might face property damage:

> *Sometimes many neighbors, I don't know why, maybe because of envy, but they start to throw rocks at* (our) *rabbits, so we can't have them there. The same is passing with our turkeys right now.*

A Guatemalan parable representing both the Latino and indigenous cultures of the country portrays two sets of crabs in two separate buckets. One bucket represents Guatemala, while the other represents a non-Guatemalan context. In the latter bucket, the crabs help one another out of the bucket. In the Guatemalan bucket, the crabs instead try to drag down other crabs attempting to climb out (Pers. comm., 2015). This parable is reflected in such descriptions of jealous behavior within communities. At the same time, however, participants articulated that education "is not just for them, but for everyone." They described feeling that it was their moral obligation to share the knowledge they might gain in school or through other opportunities outside of school with their family, and even with their members of the village at large. Further, they explained how they believed everyone in the community is equal, and they were "no better than anyone else" just because they may have a higher level of education than others.

Social place meanings

Participants described both tangible and intangible social place meanings. With respect to tangible social place meanings, they spoke of the presence of beneficial social institutions in their villages, such as schools, health clinics, and churches. Individuals commented on the fact that the establishment of a school or a clinic took place recently, sparking positive social change in their villages. Thus the place meaning is not in the physical structure itself, but relates instead to the access to education or health care that were not available to them before.

> *I also like that in our community there is a health center, where sometimes nurses come to take care of people who need attention. That's the most important thing I've seen in my community, that there's been a change. Now we have people to help us.*

> *What I like best in my community is that now we have access to education. Before we had to walk a lot, or... there wasn't anywhere we could study. But now there's an educational centre, a place we can go study, which has made it a lot easier for us. Because if there wasn't an educational institute in our community, we wouldn't be studying. The other thing is that there is a health centre in my village for any emergency, we can visit this centre. It is a big help to us.*

Individuals value the presence of modern services in their village, such as electricity and a corn mill, which are not common to Q'eqchi' villages that are far removed from the urban center. Again, the meaning is not in the physical technology itself, but in the fact that it makes women's lives easier:

> *There isn't a school, but there is electricity... and a mill for corn* (And why is it a good thing that there is a corn mill in the community?) *For example, if a mother can't grind, she can go there* (So it saves some time?) *Yes.*

Participants explained that their village is meaningful because it is where they can live close to their immediate family, or even to all the generations of their family:

> *I'm also fortunate because I can live in the same community as my parents. They live really close to me, to us. I can also have my children close and see them often. It is a pride for me to be with them always, to be able to see them always, to know what they are doing.*

Individuals spoke of their appreciation for the intangible positive qualities of their villages, such as solidarity, and the intergenerational support and cooperation:

I like everything in my community, because every time there is a meeting for all the residents, everyone participates, older people start talking about how the young people should live. That's what I like, they help us to get ahead and have a vision. I also like when all of the young people can learn knowledge between us, and in that way we can have a better life.

They value when people live in peace without problems, and do not engage in fights:

Father: I like the community because here people practice solidarity, and I like the coexistence and living in peace with all of the neighbours and everyone who lives in the community. I also like the people who are thinking about studying, especially my children. I am always a very proud parent of them, and I think it is an accomplishment what they have achieved. It is a change for them that they are studying. What I also like is that there aren't problems in the community, for example, there aren't fights.

Very few individuals acknowledged religious values as important social place meanings, and they did not provide detailed descriptions:

What I like best in my community is that they still practice values, for example when somebody dies everyone gets together. For me, I like this is a lot because it's a culture Q'eqchi', and people still practice that and they teach us so we can keep practicing too.

Negative intangible social place meanings included a lack of solidarity, intergenerational support, and cooperation, as well as fighting between village members.

Ecological place meanings

The ecological place meanings of young Q'eqchi' women were manifested in their appreciation for the forests in their village, the presence of wildlife in their village, and the beauty of their village compared to an urban area or another place they spent time in. Young Q'eqchi' women appreciate their villages for natural beauty such as a forest nearby or a view of rolling green mountains:

I like my community because it has forest... we live close to the forest.

(Why is your village important to you?) *It's important to me because it's a community that is close to a forest, and there is a beautiful view…*

Young Q'eqchi' women value the presence of wildlife in their villages:

I live in a very beautiful community, because… there is still some forest, and there are still some animals.

> *…they* [the birds and animals] *are very beautiful to me because they are like the adornments of the forest.*

The natural beauty is a reason why people want to continue living in their village, as opposed to an urban area or a place lacking similar beauty:

> (And why do you want to stay in your village?) *Because we have a beautiful environment and it's not the same as living in a city where it is very small and there is a lot of pollution.*
>
> *I like it because at the time... when the sun rises, you can hear birds singing and it's very beautiful. I also have some family members who live in town, and it's very different because when you wake up you can only see electric lights and hear trucks going by, it's nothing compared to what we have in my village.*

They mentioned missing the natural beauty of their own villages when they were visiting other members of the family for an extended period of time, needed to work for several weeks or months in another place, or had to pursue their studies elsewhere because their community does not have an elementary and/or high school educational institute:

> *When I'm studying what I miss is there are no animals or birds, and I miss my village a lot because there are still lots of birds that sing in the morning.*

People feel sad when they hear the older members of their community reminisce about how their village used to be beautiful once upon a time because it had more trees, water, and wildlife compared to the present day:

> *In my village there are mountains, water, and some mountains with few trees. There are no longer many animals. Twenty or twenty-five years ago my mother said there were many animals, large ones like mammals, but now those animals don't exist. They didn't know to protect the forest, they would cut down everything, and when they realized all of the animals had disappeared, and she says it's for ignorance they did it because they didn't know the effect that cutting down trees would have. In Chicabnab* (a remote mountain village) *it is a forested area where there are many animals that used to be in our village but no longer are. So I think if we plant lots of trees the animals will come back again, those animals that used to be there.*

Based on a limited survey of men as part of this research, several place themes appear to apply to both genders. For example, men and women alike, representing all villages included in this study, exhibit positive place dependence by expressing their appreciation for access to cultivable land in their village. One man explained:

> *We dedicate ourselves to agriculture. We plant... we work in our milpa* (cornfield)*, we weed it, and then we plant. Also in the area where the beans are, we weed and plant beans. And other crops. This is how we can live. If we didn't have this knowledge before, maybe life would be impossible. This has been our job since we were children, and we keep doing the same now*

Men also acknowledged the challenges with planting, such as the lack of space and finances. Both genders emphasized their constant use of the trees in their communities as firewood for their cooking fires. Like women, men ascribe meaning to the beauty of their place. With respect to place identity, only the women described situations reflecting the "crabs in a bucket" parable, but their stories suggest that the negative effects of jealousy specifically related to economic success impact the whole family, including the men. However, the pursuit of an education appears to create unique social issues for women. Relative to place meanings, many positive and negative social place meanings are shared by men and women. Men equally value intergenerational solidarity, support, and cooperation, and dislike it when members of the community fight amongst each other.

Table 3: Dimensions of young Q'eqchi' women's sense of place

Theme	**Sub-themes**
Positive place dependence	Access to cultivable land
	Access to other forms of food security (the ability to raise domestic animals)
	Ability to provide for themselves and their families
	Acknowledge the economic benefits of cultivation
	Ability to be self-sufficient
	Access to natural resources such as trees and water
	Acknowledge the economic benefits of having access to natural resources
	Enjoy planting as an activity (both crops and trees)
Negative place dependence	Lack of cultivable land
	Financial and logistical challenges of cultivating crops
	Limited income-earning power from cultivation
	Diminishing natural resources
Positive place identity	Accustomed to living in their place
	Feel comfortable being themselves in their place
Negative place identity	Unable to *salir adelante* as individuals because of the jealous behaviors of others

Positive social place meanings	Beneficial social institutions
	Modern services (electricity, corn mill)
	Proximity of family members
	Solidarity among village members
	Intergenerational solidarity, support, and cooperation
	Peaceful living among village members
	Presence of Q'eqchi' religious values
Negative social place meanings	Lack of solidarity, support, and cooperation
	Fighting between village members
Ecological place meanings	Appreciation for the forest
	Appreciation for the presence of wildlife
	Appreciation for the comparative beauty with other places

Discussion

In contrast to place research that focuses on middle-class Caucasian audiences of both genders from developed countries, I investigated how sense of place is conceptualized among the young women of an understudied, indigenous audience. This study explored a new approach to examining indigenous women's place meanings and attachments: a quantitative theoretical framework for conceptualizing place constructs was used in combination with qualitative methods. Three "tensions," emerged as crucial to understanding sense of place among young Q'eqchi' women of Alta Verapaz. First, the data highlight a tension between their place dependence and ecological place meanings, which could have both social and environmental implications, on a local and global scale. Second, I identify a tension between young Q'eqchi' women's place magnets and anchors, which could impact their future education, social elevation, and mobility opportunities. Third, tension appears to exist between collective Q'eqchi' place identity and individual female identity. These tensions resonate with prior work conducted in rural, resource-dependent, patriarchal regions of developing countries, and in resource-dependent communities of the developed world. Finally, a fourth additional tension concerns the dominance of place dependence themes in this study versus the dearth of spirituality themes, and I examine how this tension relates to the limitations and advantages of the research approach.

Utility or beauty: place dependence versus ecological place meanings

Regardless of age, gender, village, educational background, or participation in WALC, young Q'eqchi' women spoke of their utilitarian dependence on place for cultivation and natural resources. These instrumental needs result in deforestation, erosion, and pollution, and such environmental degradation conflicts with the ecological place meanings that young Q'eqchi' women ascribe to the intrinsic beauty of their surroundings, found in rolling green scenery without any agricultural or resource-extractive activity. Many participants expressed worry and frustration over the diminishing availability of pristine landscapes, or attributed it to the poor resource management behaviors of others or the rapidly growing population in their village. Young Q'eqchi' women say they feel sad when they hear elders describe the former beauty of their communities at a time when there was less human activity.

We see parallels in place research among resource-dependent communities of developed countries. In a qualitative study of place attachment and community in Seward, Alaska, tension appears to exist between the residents' place meanings and their place identity. Many residents ascribe significant place meaning to certain outdoor locations in their community, and lament the presence of tourists overusing and degrading these areas. At the same time, tourists are the mainstay of the economy in Seward, attracted there by virtue of the town's access to nature and recreation opportunities. The omnipresent tourism industry plays an important role in local individuals' place identity (Amsden et al., 2010).

Overall, however, my findings differ from the larger body of place scholarship conducted among developed country audiences, which has extensively highlighted place attachments and meanings being formed through a wide range of momentous life events, the ability to engage in fun frequent outdoor recreational activities, and/or place experiences that are shared with family and friends (Amsden et al., 2010; Beckley et al., 2007; Davenport & Mae, 2005; Kyle & Chick, 2007; Low, 1992). In research involving resident-employed photography, participants were first

asked to capture through photography what most attached them to their place. They were then interviewed about the subjects of their photographs. One individual took a photo of the beach where they lost their virginity, marking the end of childhood. Others took pictures representing their ability to enjoy outdoor activities such as swimming in waterfalls or hiking on trails, or to spend time with family and friends (Beckley et al., 2007). In research around river meanings, respondents attributed significance to the river because of its ability to bring them peace and relaxation, or as a place they could enjoy viewing wildlife (Davenport & Anderson, 2005). Tent campers at an agricultural fair in rural Pennsylvania described the annual rituals and traditions contributing to family narratives that in turn deepen social place meanings tied to a particular place (Kyle & Chick, 2007). Early on, Low (1992) categorized place attachments as forming through the factors underscored by such research, including links to family (genealogical), participation in cultural events (celebratory cultural events), storytelling (narrative), and connections to religious sites (cosmological). Cross (2015) recently proposed seven common processes that allow individuals and groups to develop place attachment: sensory, narrative, historical, spiritual, ideological, commodifying, and material dependence.

In contrast, my study elucidates a narrow range of factors contributing to young Q'eqchi' women's sense of place. Research participants talk minimally about the role that family and friends play in making their villages special to them, and they never discuss how certain important life experiences or religious meanings have contributed to their attachment to a particular place. This could be because their day-to-day routines are primarily structured around a subsistence-based lifestyle, they are taken for granted as part of daily life, or because they were reluctant to share such personal anecdotes with a stranger.

Place scholarship underscores that resource use is not always consistent with people's sense of place. Such findings have larger implications for Q'eqchi' communities at large and the environments they inhabit, as the few men interviewed in this study made comments

similar to the women that suggest a conflict between place meanings and place dependence. First, this tension could cause increasing social strife, as village members dispute how to best allocate land and resources in order to meet opposing desires in the face of higher demand and resource scarcity. Community members will have to collaboratively reconcile both place meanings and place dependence by changing their practices and/or by modifying their place meanings. The Q'eqchi' cannot avoid resource use, and anecdotal evidence suggests it is challenging for them to keep designated areas free of any human activity. Perhaps they could adopt agroecology or agroforestry practices that help maintain biodiversity while still allowing for cultivation and resource extraction. However, in doing so they would have to ascribe meaning to land that is diverse but not untouched.

The tension between place meanings and dependence could instead push many individuals into currently uninhabited areas of Alta Verapaz, which means encroaching further into ecosystems such as cloud forests. Primary cloud forests in central Guatemala, an area which includes Alta Verapaz, have experienced high rates of deforestation over time in large part because of slash-and-burn agriculture (Mañez Costa & Renner, 2005; Markussen & Renner, 2005; Renner et al., 2006). This is significant from a global conservation perspective given that Alta Verapaz is located within a Biodiversity Hotspot (Myers et al., 2000) and encompasses several Important Bird Areas (Eisermann & Avedaño, 2009). If villages continue to expand with population growth, they will eventually reach the limit of uninhabited land.

Do I stay or do I go: place anchors versus magnets

Traditional place scholarship typically focuses on magnets – the attractive, positive qualities that motivate individuals to stay in a given place. Here I instead emphasize the anchors that trap people somewhere they feel unhappy and limit their capacity to move (Beckley, 2003). Among

young Q'eqchi' women, such anchors could include place dependence, class and socioeconomic status, as well as sociocultural norms and expectations around land, education, and gender roles. I propose that the definition of anchors could be extended to include these issues. Despite the factors anchoring young Q'eqchi' women to their villages, perhaps certain magnets are powerful enough to compel them to stay even if they were able to leave.

The Q'eqchi's subsistence-based practices are threatened by deforestation and other forms of environmental degradation, thus their place dependence makes them feel vulnerable. Young Q'eqchi' women seem focused on their family needs for cultivable land, trees, and water over the needs of other community members, in such a way that sometimes appears competitive as opposed to cooperative. Many individuals feel frustrated when they see others mismanaging resources, through the "unchecked cutting down of trees" or the polluting of local springs and water bodies. They worry about having less and less land each year to divide up between family members. However, due to class and economic status, most lack capacity to move and thereby escape their challenges. Even if they could move, similar problems exist in many other villages throughout the region. Individuals could move to Cobán and find work unrelated to cultivation, but limited education and expertise might also prove to be obstacles in finding employment, given that many young Q'eqchi' women come from isolated villages where they could not access academic institutions or develop diverse skills.

Although it was beyond the scope of this research to investigate women in development issues, my work shows that young Q'eqchi' women are moored to their villages in ways that men are not, due to sociocultural norms and expectations around land, education, and gender roles that formed within a patriarchal context (Carey Jr, 2008). Oppression of women is prevalent throughout Guatemala. For example, violence against women is often justified by female acts of self-determination that do not align with the wishes of men, and "according to the criminal record, both Mayan and Ladino men beat their female partners for speaking their minds" (Carey Jr. &

Torres, 2010, p. 146). Kahn (2006) describes the frequency of domestic violence specifically among Q'eqchi' Maya women, and describes how they are often denied the opportunity to receive an education. Even a Q'eqchi' man interviewed as part of this research acknowledged the gender inequality when asked what they do not like about their community: "I don't like… that people almost never support their daughters in studying. Many people don't give their daughters permission to study. Many people think that women are just meant to take care of the house, and that isn't right." It can be difficult for young women to receive permission from their fathers to attend school, though it is worth noting that sometimes the mothers put pressure on their daughters to stay home from school in order to provide company or household help. Historically young women have had their marriages dictated by their fathers, and when married, they are considered the property of their husbands. Furthermore, in the Cahills experience, once young Q'eqchi' women marry their husbands do not allow them to continue their studies (Pers. comm., 2016).

The women in development literature also highlights the challenges and constraints unique to women living in rural, developing countries. Rural women throughout the developing world are less apt than men to own or have access to land, or to control the use of crops produced on a given area of land. In the rare cases that women do own land, on average they have less land than men, they will often lose access to land or become landless if their marital status changes (Fortmann, 2006). Rural Latin America reflects widespread gender inequality with respect to the distribution of assets, and land is traditionally inherited by male household heads (Lipton, 2009). Work conducted elsewhere in Guatemala (Lee-Smith & Trujillo, 2006) supports my contention that young Q'eqchi' women also lack ownership over property and are often excluded from decision making and other benefits tied to land control.

Young Q'eqchi' women are less likely than men to have access to education. They may be forced to leave school at a young age due to a family's limited financial resources, and a cultural emphasis on the male members of the household (Kahn, 2006). The limited or nonexistent

schooling of women is another well-documented, pervasive issue throughout the rural, developing world (Barrig, 2006; Blue, 2002 & 2005; Kirk, 2005; Mueller & Krawinkel, 2005; Olivera et al., 1994). In the Q'eqchi' context, we heard research participants describe how parents often do not allow daughters to attend school for reasons that reflect gender bias. If a large family has limited economic resources, the education of male members is prioritized, though boys often leave school to help earn money for their families. However, if a village does not have an academic institute, parents are more inclined to give sons rather than daughters permission and financial support to live in another village, or to bus and walk home after late classes in the dark. Mothers apply pressure on daughters, not sons, to stay home from school to help manage the household, take care of younger siblings, and keep them company. Sometimes girls admit to leaving school because of a lack of interest and motivation, or because the teacher at school admonishes them (or even physically abuses them) for not getting their homework done. In such cases, their parents may not insist they persevere with their studies. Further, all these factors are reinforced by another overarching sociocultural norm and expectation throughout Q'eqchi' communities: women are supposed to get married, have children, and stay at home to take care of their families. It is common for women to get married in their early teens because their families cannot afford to support them along with numerous other children. Many women are forced to enter marriages dictated by their fathers, and once married, are considered the property of their husbands (Kahn, 2006). Young marriage leads to a long period of child-bearing years for many Q'eqchi' women, which in turn contributes to the acute population pressures facing Q'eqchi' communities and Guatemala as a whole.

Alvarez-Castillo and Feinholz (2006) assert that it is "very difficult for women to build their capability to participate or represent themselves if they cannot break free from their imagined dependency or from oppressive structures" (p. 117-118). It may be common for young women to leave their place in order to move to the village of their new husband. But it is less common for

them to "cut the anchor rope" and leave their community to pursue education or career opportunities elsewhere. The sociocultural norms and expectations around land, education, and gender roles in Q'eqchi' communities could be characterized as place anchors because they contribute to women's *real* dependency on fathers or husbands. Such norms and expectations create oppressive structures that limit the power and autonomy of women with respect to class, economics, and mobility. All these realities make women more vulnerable than men to being unhappily anchored in a given place.

Tensions between place anchors and magnets could make a woman's decision to leave her village difficult, even if she had the resources to move. The types of magnets described by young Q'eqchi' women included the availability of natural resources and space to plant, as well as the ecological beauty. People ascribed meaning to the social dimensions of their villages, including solidarity, cooperation, and mutual support. Community members help each other plant and harvest corn, support orphans and poorer families in the village with food, and share knowledge with each other. People also value their villages for the presence and comfort of their family members. Such "magnetic" qualities shared by many different communities were described as compelling reasons why people want to stay in their village. It is possible that young Q'eqchi' women experience place attachment of mixed positive and negative emotions (Manzo, 2015), and that this ties them to the path forged by their mothers and grandmothers more so than the sociocultural norms and expectations we have proposed as anchors, thus perpetuating the limited education, social elevation, and mobility opportunities among another female generation.

To "salir adelante" or not: individual female identity versus collective Q'eqchi' place identity

The third tension I identify from my findings is between collective Q'eqchi' place identity and individual female identity. Wilson (1993) suggests that for the Q'eqchi', "historically, the community has been a more salient basis of identity than the ethnic group" (p. 126). If collective

Q'eqchi' place identity strongly informs the identity of individuals, it is likely that many young women have internalized the gendered expectations of their communities. At the same time, young women who participated in this research said they want to make personal choices that are different from their parents, older siblings, and/or other members of the community, such as pursuing their education beyond sixth grade, waiting until they are older to get married, and having fewer children. They said these choices could help them *salir adelante* ("get ahead") and make a better life for themselves. These young Q'eqchi' women appear to want to adopt individual identities that run counter to the collective identity. It could be challenging to reconcile emerging individuality with the pressure to conform to social norms embedded in the collective identity.

Another characteristic of collective Q'eqchi' place identity appears to be that everyone in the community must be viewed as equals, regardless of education level or other achievements. In addition to stating that everyone is equal, participants described their belief that "education is for everyone" and their sense of obligation to share any knowledge gained – in school or in the WALC program – with others. At the same time, individuals earning a higher education compared to their peers, or earning more money, feel pulled back down by the other "crabs" (who spread gossip or damage property) when they try to escape the bucket. These comments could reflect sensitivity of the collective attitude toward equality, or could be a strategy intended to prevent jealous behavior in others. Women could be careful to emphasize they are no better than anyone else as a means of avoiding critique and gossip inspired by envy. Or perhaps this reveals another form of tension between emerging individual identities striving to *salir adelante* and the collective place identity telling them to stay in their place (both literally and figuratively) and remain equal.

Instrumental or symbolic: place dependence themes versus spiritual themes

The spiritual dimensions of young Q'eqchi' women's place dependence and place meanings did not emerge through my data. This creates a tension with existing literature and key

informants, both of which emphasize the significance of spirituality in the Q'eqchi' relationship with their place. While this tension reflects the potential limitations of my research approach, it suggests a strength as well. Starting with limitations, the majority of my participants were young women, rather than men or elderly Q'eqchi'. Q'eqchi' men have primary responsibility for cultivation, and they could likely speak better to the spiritual dimensions of this activity (Pers. comm., 2015). Older Q'eqchi' men *and* women would likely have a better understanding of the spiritual traditions embedded in these practices due to more life experience and knowledge. Hans and De Ceuster (2001) underscore that "old people are the most suitable to transmit knowledge about the spiritual cosmovision of agriculture" (p. 10) and note that the younger generation is increasingly out of touch with such traditional beliefs. It is worth noting, however, that the few men as well as older men and women I did interview did not comment on the relationship between corn and Q'eqchi' cosmovision.

It is possible that research participants did not want to discuss their spirituality with a stranger, due to the recent memory of persecution during three decades of Guatemala's civil war and the countless killings and disappearances of rural indigenous peoples it involved, including the Q'eqchi' (Smith, 2006, p. 201). It could be that the questions asked were not appropriate for eliciting symbolic reflections on place, which could include their spiritual relationships with the land. The theoretical framework I used evolved in the context of developed country audiences, and this could have influenced or limited understandings of the Q'eqchi' in ways we do not even have the capacity to know. Future researchers exploring sense of place among the Q'eqchi' and other indigenous audiences through this framework could involve a more diverse sample of individuals, experiment with different types of questions, and spend a longer period of time with the audience as has been done in prior narrative inquiry focused on the Q'eqchi' and indigenous populations in different parts of the world (Hatse & De Ceuster, 2001, 2004; Kearney & Bradley, 2009).

The lack of data reflecting symbolic place meanings is a potential limitation of my theoretical framework, but its capacity to inspire comments about place that did *not* require a deeper level of symbolism or abstraction is also a strength. Drew et al. (2010) note that young people between the ages of 10 and 18 are still developing the necessary capacity and skills to articulate complex ideas, and many of my research participants fell within the 12-18 age range. It is still unclear whether or not developmentally, children and youth are capable of ascribing symbolic meanings to place, and of being reflexive about their place, in the same way as adults. This question has particularly emerged around the use photo-elicitation research as a growing alternative method to explore children's sense of place. Lim and Barton (2010) suggest that children can use pictures symbolically. Rasmussen (2004) asserts, based on the photo-narratives generated by her research, that "the many meanings and kinds of 'children's places' should make us aware of children as social and cultural actors who create places that are physical and symbolic" (171). On the other hand, it is possible that children and youth may not have the ability to be symbolic. While Punch (2002) notes that insights shared by children "have their own validity in terms of being their own perspectives and the way the world seems to them" (p. 325), she reminds us of the limited development, experiences, worldview, and vocabulary of youth. Her findings reflect young people across cultures, as she draws from literature focused on developed country audiences as well as from research conducted with rural Bolivian children.

The additional strengths of my research approach have implications for the study of indigenous sense of place as well as for place scholarship broadly. First, the theoretical framework applied in this study allowed me to acquire data about the dimensions of young Q'eqchi' women's sense of place that have not – to my knowledge – been discussed in other texts. Although the instrumental aspects of place dependence align with prior research about the subsistence-based needs of rural, indigenous societies, they have not been similarly conceptualized through a sense of place lens. The other gender-focused tensions I have identified here, including place magnets

and anchors, jealousy issues, and the desire for higher education, have not been extensively detailed in literature about rural women in developing contexts, if at all. Second, the outcomes of this study align with previous arguments that embarking on methodological exploration in place scholarship, and not bounding certain audiences within one epistemology, can result in new types of research findings (Stedman & Beckley, 2007). Finally, applying the research approach used here in similar contexts elsewhere in Latin America and beyond could help us expand our understandings of indigenous relationships to the land.

Conclusion

In this paper I contributed to our knowledge of an understudied group of indigenous women, and offered methodological insights that could extend the field of place scholarship. Young Q'eqchi' women are shaped by interactions between the ecological and social dimensions of their place, which is in a region of high biodiversity experiencing extensive environmental degradation. They face particular challenges that have important implications for the long-term sustainability of the Guatemalan highlands environment and the communities therein. This knowledge could inform efforts to develop and implement appropriate conservation strategies that reflect a holistic understanding of Alta Verapaz's complex indigenous landscape. Finally, the framework and methods I applied to a study sense of place among young Q'eqchi' women demonstrated both advantages and limitations that could be employed and refined in future research.

CHAPTER FOUR: ENVIRONMENTAL STEWARDSHIP PRACTICES AND MOTIVATIONS AMONG YOUNG Q'EQCHI' MAYA WOMEN OF ALTA VERAPAZ, GUATEMALA

Introduction

Many indigenous populations around the world maintain a traditional, subsistence-based lifestyle in rural areas of high biodiversity facing environmental threats (Maffi, 2002, 2007). Thus, the questions of how and why these groups steward their land have significant conservation implications. The Q'eqchi' Maya are the predominant indigenous group in Guatemala's central highlands and northern lowlands, an area which includes the department of Alta Verapaz (CCFC, 2016). Alta Verapaz is ecologically-significant in the global context, being part of a Biodiversity Hotspot (Myers et al., 2000). It has high bird diversity (Renner, 2003) and encompasses several Important Bird Areas (Eisermann & Avedaño, 2009). The department has experienced high rates of deforestation and extensive loss of primary cloud forest due primarily to slash-and-burn agriculture (Mañez Costa & Renner, 2005; Markussen & Renner, 2005; Renner et al., 2006). Little prior academic research has focused on the Q'eqchi'; therefore, we have a limited understanding of how and why they are (or are not) engaging in environmental stewardship throughout the diverse, threatened region.

This paper focuses specifically on young Q'eqchi' women's environmental stewardship practices and the motivations behind them. I conducted this study using qualitative methods in the remote mountainous highlands of Alta Verapaz. My findings both support and contradict prior research about stewardship among other indigenous groups broadly and the Q'eqchi' specifically. Indigenous peoples are sometimes portrayed as being innately inclined to steward the earth due to their subsistence-based needs and spiritual beliefs (Appiah-Opoku, 2007; Beckford et al., 2010; Middleton, 2013; Ross et al., 2011), while at other times they have been described as being exclusively exploitative of natural resources (Fennell, 2008; Krech, 1999; Low, 1996). My research underscores subsistence-based needs

as the strongest motivator of young Q'eqchi' women's stewardship practices, while spirituality themes were essentially non-existent. The data also suggest that many Q'eqchi' engage in unsustainable resource use and extraction.

This chapter answers research questions concerning environmental stewardship practices among young Q'eqchi' women and the underlying motivations driving these practices, in order to contribute to broader understandings of the relationships between young indigenous women and their environment. I ground my findings in the literature around environmental stewardship practices and motivations among both indigenous and non-indigenous groups. In Chapter Six (Conclusion) I will use data presented in this chapter to address overarching goals of the study, such as how increasing our knowledge of young Q'eqchi' women can help us understand current environmental and social challenges they face in Alta Verapaz, and future opportunities for positive change; how EE programs could help address these challenges and opportunities; and how this knowledge could be useful to initiatives addressing similar socioecological challenges and opportunities in other rural, biologically-diverse regions of the world inhabited by indigenous groups.

Environmental Stewardship

The word steward originates from "sty-ward," the term for an individual who looks after farm animals, and the word steward*ship* can be traced back to references made in the Old Testament about agricultural practices. Historically, stewardship has held meanings about holding land in trust to God (Worrell & Appleby, 2000). Stewardship has appeared as a stand-alone term in conservation and land management literature, or in combination with other words (Brown & Mitchell, 1996; Smythe et al., 1996; Tuttle, 1993). In Europe, for example, "countryside stewardship" described agricultural land management from a conservation perspective (Merlo et al., 1994)and in Canada and the United States, "land stewardship" has

referred to the management of agricultural land as well as forests (Diamond et al., 1995; Gaboury et al., 1997; Owen, 1995). "Wildland stewardship" has been used to describe private land use management decisions (Scott et al., 1995), while "forest stewardship" has encompassed different forms of forest management (Alexander, 1989; Bender, 1994; Thomas, 1994). Today, the word stewardship still lacks one consistent use or definition, though it often refers to efforts aimed at environmental improvement (Romolini et al., 2010, 2012).

Like stewardship, *environmental* stewardship is a contested term, as it has been characterized as an attitude, a behavior, or a norm, and described in ways that place different emphasis on responsibility, moral/ethical obligation, or religion (Worrell & Appleby, 2000). For example, some definitions underscore our shared responsibility for maintaining environmental quality through continuous practices (U.S. EPA, 2016). Some indigenous characterizations of stewardship reflect a responsibility to care for land that belonged to ancestors, or refer to the personal and collective onus of caring for our planet in the present day and working to ensure the long-term well-being of its flora and fauna (Appiah-Opoku, 2007; Beavis, 1994). The guardianship role requires an individual to exhibit self-restraint and prudence when it comes to pursuing personal interests that could be detrimental to the common good, and to live by other ethics and morals that acknowledge the environment (Berry, 2006; Di Paola, 2013; Welchman, 2012). Although the term has often referred to a management and policy approach toward a natural area (Hesterman & Thorburn, 1994; Morse, 1995) others argue that ethically, conceptualizations of environmental stewardship should not be so narrowly focused on such human-centric needs. Instead, stewardship should reflect a "broader, more life-centered concept" which recognizes the legitimate needs of other species in addition to current and future generations of humans. From this perspective, environmental stewardship is defined as consuming natural resources responsibly and conserving them for the equitably-distributed use of all living beings (Worrell & Appleby,

2000, p. 270). From a religious perspective, the term stewardship reflects the belief that because God created nature, it should be protected (Sherkat & Ellison, 2007).

In the urban literature, the definition of environmental stewardship refers to all variations of environmental engagement that take place in the urban context. Individuals are defined as stewards when they are involved in civic groups such as block associations, or environmental organizations such as city community garden groups and park conservancies, that manage, conserve, monitor, or advocate and educate on behalf of different urban environmental issues (Fisher et al., 2012). In addition to underscoring specific stewardship practices, the urban definition also highlights the role of stewardship in helping individuals reconnect to local ecosystems, in order to deconstruct myths about the lack of opportunities for meaningful nature-based experiences in cities. Stewarding encourages frequent interaction with the natural world, through which people can gain positive experiences, memories, and perceptions of the biosphere (Andersson et al., 2014; Colding & Barthel, 2013).

In this paper I will define environmental stewardship as the sense of responsibility to maintain or restore environmental quality. This definition acknowledges the use of the term in some indigenous literature (Beavis, 1994; Appiah-Opoku, 2005), and reflects my own data concerning young Q'eqchi' women's motivations to engage in stewardship practices.

Environmental stewardship motivations among indigenous groups

Based on a broad review of literature covering a diversity of indigenous populations, it appears that two principal motivations behind many indigenous peoples' environmental stewardship practices include dependence on natural resources and environmentally-embedded spiritual worldviews (Appiah-Opoku, 2007; Middleton, 2013; Prosper et al., 2011; Ross et al., 2011). This review is not intended to reflect the reality of all distinct indigenous groups. First, some research suggests that rural indigenous groups with low population

densities have existed on small-scale subsistence-based economies that are dependent on the local habitat, and this dependence has motivated their stewardship behaviors. Over millennia indigenous peoples have used natural resources sustainably through collective and equitable decision-making in order to support both current and future generations (Appiah-Opoku, 2007; King & Stewart, 1996; Nepal, 2004), creating a stronger indigenous-land connection compared to non-indigenous populations (Hinch, 2001).

Environmentally-embedded spiritual beliefs are considered a second significant motivation behind the environmental stewardship practices of indigenous groups (Ross et al., 2011; Middleton, 2013). They attach spiritual importance to all the physical aspects of their surroundings, which are viewed as the forces that gave life and meaning to the world (Smith, 2012). Indigenous peoples often believe in a set of guiding principles established by a spiritual cosmovision, which include conceptualizations of a creator or deity who has entrusted them with protecting the land, water, and other species. As such, "responsible environmental stewardship [is] advocated as an obligation and advanced as the essence of the cultural ecology of the people" (Beckford et al., p. 244). Impeding indigenous peoples' stewardship capacity is detrimental to their well-being as the physical landscape both supports their survival and represents an integral part of their cultural identity (Rampersad, 2009).

The intertwined subsistence-based and spiritual motivations behind indigenous environmental stewardship is underscored by examples of traditional subsistence-based approaches to natural resource use among many indigenous groups (Prosper et al., 2011; Reichel, 1989; Ross et al., 2011; Tyler, 1993). These examples often reflect both spiritual beliefs as well as high-level scientific understandings of ecological dynamics and relationships (Berkes, 2009). Kassam (2009) further underscores that:

> Indigenous human ecological knowledge is context specific: it is related to, and contained within, a group of people who live in a defined geographic region. Knowledge in this context is derived fundamentally from the environment. It includes a web of interactions between humans, animals,

> plants, natural forces, spirits, and land forms. Therefore, social, ethical, and spiritual relationships also have an ecological foundation. (p. 682)

Both literature and key informants suggest that the Q'eqchi' steward the land due to their coupled subsistence-based needs and spiritual beliefs. They regard the earth (referred to as Saint Earth, Mother Nature, or Cosmos) as the provider of life, and thus a gift that is not be taken for granted. Their stewardship motivations reflect their respect for the gods inhabiting the land they depend upon for survival (Centro Ak'Kutan, 2007). Sometimes these gods are Judeo-Christian figures, and other times they are ancient Maya deities such as Tzuultaaqaa (Tzul-taka) who is believed to inhabit the mountains (Kahn, 2006). The Q'eqchi' ask the gods' permission each time they use the earth by cutting down a tree or by clearing land to plant more corn (Pers. comm., 2015).

Environmental stewardship motivations among non-indigenous groups

Research concerning environmental stewardship among non-indigenous groups in developed countries does not suggest subsistence-based needs are a significant underlying motivation like they are among indigenous groups. For example, the Volunteer Functions Inventory (VFI) (Clary et al., 1998) though initially conceived within the community service context, has been increasingly used to conceptualize environmental volunteerism (Krasny et al., 2014). The VFI describes how individuals are motivated to engage in environmental stewardship as a means of expressing their altruistic concern for others (values function); seeking fresh knowledge or skills (understanding function); socializing with others and building new relationships (social function); achieving career-relevant benefits (career function); assuaging their ego and negative feelings such as guilt about the degradation of the planet (protective function); and experiencing personal growth (enhancement function).

Additional stewardship motivations highlighted by the literature include sense of place and memory, generativity, spiritual/cultural values, and wanting the opportunity to reflect,

escape, exercise, educate others, satisfy an environmental care ethic, as well as connect with and give back to one's community (Andersson et al., 2014; Asah & Blahna, 2012; Bushway et al., 2011; Krasny et al., 2014; Moskell & Allred, 2013). Sense of place refers to the meanings and attachments that people ascribe to a given spatial setting (Stedman, 2002; Tuan, 1977), and research shows that it can positively influence people's motivations to protect or restore a meaningful place through environmental stewardship (Halpenny, 2010; Krasny et al., 2014; Payton, Fulton, & Anderson, 2005; Vaske & Kobrin, 2001). "Generativity" is the desire to leave the world a better place for future generations, or to "create something of lasting value, for themselves and for others; to care about others; and to feel valued themselves" (Warburton et al., 2006, as cited in Warburton & Gooch, 2007, p. 44).

Research Questions

This paper addresses the following research questions:

(1) What types of environmental stewardship practices are common among young Q'eqchi' women?

(2) What are the underlying motivations driving these practices?

Findings

The following passages describe the common environmental stewardship practices of young Q'eqchi' women, as well as the primary motivations driving their practices. To illustrate my findings, I use the voices of many research participants. Given that my participants often provided similar responses regarding their place, the quotes below represent a large swathe of individuals.

Young Q'eqchi' women's environmental stewardship practices

The most common stewardship practices described by young Q'eqchi' women included those concerned with trees, water, garbage, and animals. With respect to trees, participants spoke about planting them, taking care of the ones they had already planted, and trying to be conscientious about their extraction and use of trees. For example:

> *…because there is a shortage of firewood…it is necessary to be careful with it. Yes, it is necessary to use it so we use it, it is a great necessity in the family to always have it. But we use it carefully, adequately, and we don't waste it.*

Young Q'eqchi' women spoke of stewarding trees as a specific means of protecting their water sources. They recognize that planting trees along the banks of a local spring or river helps prevent erosion. Another way they described stewarding their water sources is by collecting trash that was disposed in or around a spring, and by avoiding throwing garbage or dead animals in the springs in the first place. Collecting garbage throughout the streets of the village, as individuals or as part of organized group efforts, was described as another common practice. Finally, participants talked about not harming animals or birds. With respect to all of these activities, participants said that they encouraged others to undertake or participate in them as well, which can be considered a stewardship practice unto itself. This comment captures the practice of encouraging others to better steward water resources:

> *Yes, many people pollute the river that is passing by here, with dead animals or leftover clothes or anything. We have talked to people, that they shouldn't do that and we should take care of the river, so we are trying to improve this.*

These practices were described by the young women in this study as activities that not only *they* engage in, but that all generations of their family engage in as well. They explained that some of the barriers to engaging in these practices include lack of knowledge/skills related to tree-planting, a lack of space or time to plant trees due to being in school, sometimes outside of their villages, as well as a lack of seeds.

Young Q'eqchi' women's motivations to engage in environmental stewardship practices

Young Q'eqchi' women are motivated to engage in one or all of the different stewardship practices described above because they want to: 1) safeguard natural resources they depend on for daily survival (subsistence-based needs); 2) keep their community beautiful (aesthetic value); 3) avoid spreading disease; 4) respect the needs of both current and future generations (generativitiy); and 5) do something in response to worries about deforestation and mismanagement of resources they see around them.

Subsistence-based needs

Young Q'eqchi' women's subsistence-based need for firewood motivates tree-planting in particular. For example:

> *...that's why we plant trees as well, so we aren't left without trees. So we are cutting some, and others are growing and so that we can always find firewood. Because if not we won't have firewood.*

In addition to valuing trees for their tangible, instrumental uses, young Q'eqchi' women recognize the ecosystem services of trees. Trees are described as the key to life, because they perform many roles that keep the ecosystem healthy and functional. Young Q'eqchi' women understand that trees help maintain water sources, keep the air clean, regulate climate, provide shade required by certain crops, and provide necessary habitat to support different species of animals and birds. For example, they say that without trees all the water in their village would "dry up":

> *We plant trees because we have springs here in the community and if we cut down all the trees we will no longer have water and water is the most important thing in life. Without trees all the springs will dry up and that harms the soil.*
>
> *We also know that through trees, the springs still have life.*

They value trees for providing "good air," and for the fact that:

> *Trees are what give us life, and through them we breathe pure air.*

My participants acknowledge the role of trees in regulating climate. The Alta Verapaz highlands are known for their cool wet seasons, characterized by a constant fine drizzle known as *chipi* chipi. People are aware that decreasing tree cover influences local weather patterns:

> *Because before the weather used to be chipi chipi, but now the climate is changing maybe because of the cutting down of trees, now it is hotter.*

This motivates both the act of planting more trees and the desire to cut down fewer trees:

> (Are there other reasons why you want to plant trees?) *If we keep cutting down trees we will change the climate.*

Trees contribute to a better harvest of certain crops:

> *Cardamom and coffee need shade, that's why there are lots of trees planted there…The crops grow well when there is shade.*
>
> (And why does the family plant trees?) *Sometimes we use it as shade because some crops need shade to protect them.*

Q'eqchi' women not only recognize their own dependence on trees, but the needs of other species as well:

> *We also know that they are very useful as habitat for animals, and useful for human beings, because through trees we obtain water, and if there aren't trees it's possible that we wouldn't have water one day.*
>
> (And what is the reason you go plant trees?) *Because if there aren't any more trees, it isn't possible for birds to live.*

Finally, my participants acknowledge the interconnectedness between trees, water, and soil, demonstrating a holistic understanding of overall ecosystems-functioning. This is illustrated in part of the quote above: *without trees all the springs will dry up and that harms the soil*. They also understand how trees directly support healthy soils:

> *The reason I like the forest is because it is part of our life, and I understand now that the forest is very important for the leaves that fall... they give us fertile soils, and it's for that.*

The need for water and soil drive stewardship practices such as keeping trash out of these sources. This individual explains why it is specifically important to keep trash out of the soil:

We need to plant, and if we plant and there is garbage the seeds can't be born.

Aesthetic value

A second salient motivation of environmental stewardship is aesthetic value. The following comment captures young Q'eqchi' women's appreciation for the aesthetic and instrumental aspects of their environment, as well as their motivations to be good environmental stewards:

> *There are many resources here... water, the forest... it is very beautiful when one walks in the forest, the air is fresh and it is calm. And the water is also very beautiful, and we make a lot of use out of it. We use the trees to build homes, and for firewood. And we use water, we consume it in our home. That's what we use. But I also think it's important to take care of these things, because if there weren't trees, then maybe the water that passes here would dry up…So I think it's necessary to take care of it.* (Would it be a big problem for your family if you no longer had trees or water?) *Yes, it would be... chaos. Because if there weren't trees, the water would probably dry up. And if it dried up, we couldn't harvest anything, and probably the earth would suffer a change and we could no longer harvest anything else. But it would also harm those who live in the forest, like wild animals. They would disappear forever.*

This comment also further underscores both why young Q'eqchi' women need water and earth/soil, and how they view discrete ecosystem components as a functioning whole.

Avoid disease

My participants described how they engage in trash-collection practices to help avoid the spread of disease as well:

> *We collect water from the springs, and it's not good if it's dirty because if we bring dirty water to the family that's how we get many sicknesses. So a family always needs clean water.*

> *…if they pollute the water one day we won't have clean water that we use for many things, like drinking, cleaning the house, cleaning clothes. Water is very useful and it's important to keep it clean.*

Generativity

Young Q'eqchi' women are concerned with conserving trees, water, and soil for use in their own lifetime, and for use in the future as well. Although many young women repeated what their parents have told them, a number expressed their own concern for the future

generations. The following credo was mentioned on numerous occasions, and appears to be deeply instilled in young Q'eqchi' women:

> *If you cut down one tree, you should plant two more, or plant five more, so that we don't run out of trees.*

Worried by deforestation and mismanagement of resources

A final motivation behind young Q'eqchi' women's stewardship is their desire to do something in response to worries about deforestation and the mismanagement of resources they see around them:

> *I realize that there are few trees, so I'm a little worried, for that reason I plant trees.*
>
> *I see that in our community there are no longer forests, if we want to get firewood we need to go further to find it, because they are already cutting lots of trees, they are disappearing. The animals too, they have gone who knows where to find more places. I need for us, the young people... we need to plant more trees so that one day our environment will be good again.*
>
> *I know we don't make good use of our water, if we did we would be planting trees near our springs of water, we are cutting down many trees close to the springs of water.*
>
> *We have always worried about this, we think the forest helps us live, if we didn't have the trees we couldn't live, with forest there is water and rain, and without the forest we would have drought. Like my husband said, many people cut down trees without planting more, but in my family we always think of the future of our children. We are always thinking of this, they would not be able to expect anything if we didn't plant trees, trees give us wood for our homes, our firewood, we always use it in the house, if you cut down trees you always need to plant more.*

There appear to be similarities between Q'eqchi' men and young women with respect to common stewardship practices and the underlying motivations, based on the limited interviews with fathers as part of this research. Q'eqchi' men similarly described planting trees and taking care of the natural resources in their surroundings, not only the trees but the soil and water as well. Like women, Q'eqchi' men are motivated to engage in stewardship practices because of their subsistence-based needs, aesthetic value, generativity, and their worry about the current deforestation and mismanagement of resources occurring in their

communities. They did not mention the need to avoid disease. One Q'eqchi' man explained how:

> *We know that cutting down a tree isn't bad so long as you think about the future and think about planting more trees to have something, so that we have everything we have now later, so that it doesn't disappear. Some people are not conscious of this, they cut down trees but don't plant them. But in our case we have planted trees.*

In some cases, young Q'eqchi' women described their fathers' stewardship motivations. For example, one woman said her father plants trees because he appreciates the aesthetic value of forested landscapes:

> (And why does your father plant trees?) *He likes to always plant trees.* (And why?) *He wants to see everything beautiful.*

Table 4: Young Q'eqchi' women's motivations to engage in environmental stewardship practices

Themes	**Resource**	**Sub-themes according to resource**	**Stewardship practice according to resource***
Subsistence-based needs (place dependence)	Trees	Need trees for firewood	Planting and caring for trees; conscientious extraction and use of trees
		Need ecosystem services of trees: 1) maintenance of water; 2) air purification; 3) climate regulation; 4) shade provision for crops; and 5) habitat provision for other species	Planting and caring for trees; conscientious extraction and use of trees
	Water	Need clean water for drinking, bathing, and cleaning	Tree-planting on banks of water sources; trash collection from water sources
		Need ecosystem services of water: 1) support trees and 2) contribute to healthy soil	Tree-planting on banks of water sources; trash collection from water sources
	Soil	Need healthy soil to cultivate crops	Trash collection from ground
Aesthetic value (place meanings)	Trees	Appreciate views of trees and forested landscapes in their surroundings	Planting and caring for trees; conscientious extraction and use of trees
	Animals/ birds	Appreciate the sight and sounds of animals/birds	Planting and caring for trees; conscientious extraction and use of trees; not harming animals or birds

Avoid disease	Water	Recognize importance of keeping water clean to avoid spreading disease	Trash collection from water sources
Generativity	Trees	Want to ensure future generations have enough trees, and can benefit from their ecosystem services	Planting and caring for trees; conscientious extraction and use of trees
Worried by deforestation and mismanagement of resources	Trees	See many trees being cut down without control	Planting and caring for trees; conscientious extraction and use of trees
	Water	See their water sources being polluted	Trash collection from water sources

*Encouraging others to engage in all these activities is considered a stewardship practice unto itself, and one that can be applied to all the above sub-themes.

Discussion

My findings are both consistent with and divergent from prior research about stewardship among other indigenous groups broadly and the Q'eqchi' specifically. I will first discuss the overlap around subsistence-based needs, a sense of responsibility, and a complex understanding of ecological dynamics and relationships, while acknowledging the dearth of spirituality themes in my data. Next I will describe the potential tension between stewardship and resource exploitation, as well as how my findings contribute to the larger dialogue about characterizations of indigenous versus non-indigenous stewardship motivations.

The first key area of overlap is the fact that subsistence-based needs appear to strongly motivate young Q'eqchi' women's stewardship, as is found among other indigenous groups such as the Walpole Island First Nations of Ontario and peoples of the Amazonia (Appiah-Opoku, 20077; Beckford et al., 2010; King & Stewart, 1996; Nepal, 2004; Prosper et al., 2011; Ross et al., 2011). Young Q'eqchi' women also seem to feel a "caretaking responsibility" toward the earth, other species, and people that is often associated with indigenous groups (Appiah-Opoku, 2007, p. 94). My data highlight the specific motivations behind young Q'eqchi' women's caretaking ethic, including their concern for future generations and other species.

The data also suggest that young Q'eqchi' women have a complex understanding of ecological dynamics and relationships, which has been noted in the resource management approaches of other indigenous groups (Berkes, 2009). In the Amazonia region of Colombia, for example, indigenous groups utilize forest resources through complex sustainable systems founded upon and motivated by cosmological principles (Reichel-Dolmatoff, 1989). Young Q'eqchi' women plant trees on the banks of springs in order to prevent erosion and demonstrate systems-thinking in their awareness of how trees provide ecosystem services, such as contributing to healthy air, water, and soil, and regulating climate. It is clear that young Q'eqchi' women plant trees for the instrumental use of trees themselves, and to support overall ecosystem functioning. Recent resource management strategies of indigenous groups in the North American context include the establishment of tribal national parks, which are argued to "carve out Indigenous space and reassert stewardship roles in ways that both mirror and defy the history of North American conservation" (Carroll, 2014, p. 36). This does not appear to be an option available to the Q'eqchi, and certainly not one that women in particular would likely have the power to implement.

Also in contrast to prior research about indigenous groups, including the Q'eqchi' (Pers. comm., 2015; Centro Ak'Kutan, 2007; Kahn, 2006), my study does not suggest that spiritual connections to the land are a strong stewardship motivation among this audience. The Gitksan and Wet'suwet'en First Nations of northern British Columbia, Canada are motivated to engage in the spiritual stewardship of their land as a means of acknowledging their life source and the ancient wisdom about sustainable, subsistence lifestyles (Tyler, 1993). In maritime Canada, the Mi'kmaq's cosmovision not only embodies a spiritual connection to the natural world, but a governing moral code that dictates their behaviors toward the land and its resources as well. For example, excessive hunting is deterred by a fear of cosmic punishment (Prosper et al., 2011). The American Indian Lakota's worldview

imbues the natural world with power. Individuals believe it would be an affront to the core of their spiritual beliefs to show disrespect toward the land, thus they manage resources judiciously (Ross et al., 2010). Only a few research participants said they avoid harming animals because it is "important to care for God's creatures."

Young Q'eqchi' women's motivations for engaging in environmental stewardship practices appear to be mostly pragmatic, which contradicts prior knowledge about how Q'eqchi' behaviors are driven by an overarching spiritual cosmovision. However, both the literature and key informants suggest that many Q'eqchi', particularly members of the younger generation, are losing touch with the religious traditions of their communities (Hatse & De Ceuster, 2001, 2004; Pers. comm., 2015). This is argued to drive shifts toward unsustainable practices among other indigenous groups (Appiah-Opoku, 2007). Perhaps I would have acquired different results if my study had involved older Q'eqchi' women and men. However, if more men had been interviewed, it is also possible that the importance of maintaining habitat for animals would have been explained relative to the pragmatic need of consuming animals for protein, rather than for religious reasons. Q'eqchi' women do not hunt animals, only the men.

The data also suggest that many Q'eqchi' are *not* stewarding the land in such a way that respects the earth and balances current and future needs, which runs counter to other depictions of indigenous peoples (Appiah-Opoku, 2007; Middleton, 2013; Prosper et al., 2011; Ross et al., 2011). My participants described extensive deforestation in their surroundings, and discussed their desire for fellow community members to show more respect for the environment and the resource needs of other families. This finding is congruent with studies challenging the assertion that environmental stewardship is an innate cultural and subsistence-based value of indigenous groups, and arguing that these populations have a natural ability to manage resources more sustainably compared to non-indigenous groups

(Faust & Smardon, 2001; Fennell, 2008; Hames, 1979; Krech, 1999; Low, 1996; Smith & Wishnie, 2000). For example, in the Venezuelan Amazon, a study of indigenous hunting methods demonstrated that as resources became more scarce and Western technology became more readily available, hunting intensity increased, with little consideration of the long-term consequences (Hames, 1979). In the Arctic, the Inuit and Inpuiat peoples killed dozens of caribou and left many carcasses to rot after taking only parts of the animals (Smith & Wishnie, 2000). Other environmentally-exploitative activities of American Indian groups have included the Ute's push for a dam and reservoir to support their coal industry, the Hopi approving strip-mining on their lands, and the Miccosukee proposing housing development in Everglades National Park. Krech (1999) argues that "for every story about Indians… taking actions usually associated with conservation or environmentalism is a conflicting story about them exploiting resources or endangering lands" (p. 277).

Rather than having an elevated environmental consciousness, some claim that traditional indigenous societies have low ecological footprints because of their small populations, lack of technology, or limited ability to profit from market forces that reward increased resource extraction. However, as their populations increase, the accompanying resource scarcity and/or poverty can drive unsustainable resource extraction (Faust & Smardon, 2001; Fennel; 2008; Krech, 1999; Low, 1996). I identify the macro-level influence of these complex, overarching factors on my study site. The region is experiencing high population growth rates, and my research participants came from poor families that typically had between four and ten children. It is likely that overpopulation outpaces stewardship practices that formally kept the ecosystem in balance, such as tree-planting. Alta Verapaz has experienced extensive environmental degradation (Renner et al., 2006), and young Q'eqchi' women describe how the "unchecked cutting down of trees" is occurring in their villages with the help of modern technology such as chainsaws. Participants note that members of their

communities sell wood for a profit, confirming that market incentives for logging exist. Deforestation is considered one of the most serious issues impacting developing countries, because of its negative effects on soil, water, and climate in areas where populations still lead subsistence-based, agricultural lifestyles (Ram-Bidesi, 2015).

Rural women often play a prominent role in gathering fuel wood, and dedicate a large proportion of their time to this activity (Achudume, 2009). Further, the role of women in contributing to the maintenance of sustainable livelihoods is widely recognized (Ram-Bidesi, 2015). Although it was beyond the scope of this study to determine the amount of time spent daily by young Q'eqchi' women in collecting fuel wood, my findings do underscore the role they play and/or want to play in stewarding the local environment.

My findings also contribute to the dialogue around views comparing indigenous versus non-indigenous relationships with the land. The former group is often characterized as wise and responsible toward the earth while the latter is destructive and greedy (Redford, 1991), and much writing over the years has contributed to dichotomizing these relationships. Fennell (2008) traces this back to New World chroniclers who described indigenous peoples as maintaining a balanced relationship with nature and being innocent of environmental sin. Others later perpetuated the image of the "noble savage/natural man" living simplistically and virtuously based on an environmental ethic that is more holistic than Western ontology (Fennell, 2008). Indigenous peoples continue to be viewed as natural caretakers of the land (Appiah-Opoku, 2007), and are believed to have a deeper, more religious relationship with the environment compared to non-indigenous people (Hinch, 2001). However, Diamond (2005) describes examples of socioecological system "collapses" among indigenous societies, and recognizes the error in "viewing past indigenous peoples as fundamentally different from (whether inferior or superior to) modern First World peoples" (p. 9). Further, research shows that spiritual and cultural values tied to specific tree species can compel individuals in

developed countries to plant trees (Moskell & Allred, 2013). Chan et al. (2016) underscore that caring for the land as a necessary means of perpetuating core values and cultural practices is not exclusive to indigenous people, given that people of diverse backgrounds describe the importance of developing strong emotional and stewardship relationships with the land.

Despite these opposing views, my data suggest that both indigenous and non-indigenous groups are similarly motivated to engage in environmental stewardship practices due to a sense of responsibility and a sense of place. Young Q'eqchi' women express a sense of responsibility toward future generations of humans as well as toward aspects of the biotic community. First, the finding that my participants are concerned with safeguarding resources needed by their children and grandchildren emerged even among youth-dominated research subjects, whereas generativity is considered a strong driver of environmental volunteerism among *older* adults in developed country contexts (Warburton & Gooch, 2007). However, it is worth noting that while some articulated their own concern about safeguarding resources, many described parents' worries about the issue. This suggests that generativity is in fact a strong driver among adult Q'eqchi.

Participants expressed their sense of responsibility to maintain habitat for animals and to care for the ecosystem by recognizing its interconnected and interdependent parts. For example, young Q'eqchi' women feel obligated to protect trees because the trees in turn safeguard the water, which in turn supports the soil. In a study of landowners in New Brunswick, Canada and Maine, United States, their stewardship philosophy reflects a similar sense of responsibility for both the social and ecological dimensions of their surrounding environment:

> Our small but demographically diverse samples in both NB and ME clearly articulated a sense of obligation toward both social entities and the biotic community in the ethical stewardship of their land. Ethical obligation to a spiritual domain was present in some respondents, but overall this domain was the least represented in both jurisdictions. (Quartuch & Beckley, 2013, p. 458)

The study also notes that landowners did not view activities such as cutting down trees (which some respondents in the study considered an environmentally-degrading practice) as incompatible with good stewardship. Resource-use to benefit one's family was acceptable, so long as it did not negatively impact the land and biotic community over the long-term.
It is possible that Q'eqchi' individuals described by the respondents in this study as not embodying the environmental caretaker role would in fact self-characterize themselves as such. Although they may appear to be exploiting natural resources, they could also be simultaneously planting trees. I make this speculation based on the fact that my research participants often described how family members emphasized the importance of planting five trees every time they must cut down one. The Q'eqchi' may view their actions as meeting their ethical obligations toward both family and the environment, and in this way are living in accordance with environmental stewardship values. Alternatively, they may want to be environmental stewards but are constrained by barriers described above, such as a lack of space to plant, skills, or seeds.

Young Q'eqchi' women's place dependence emerges from their subsistence-based resource needs (discussed in Chapter Three), which have been underscored in this chapter as a salient motivator of environmental stewardship. Participants are also driven to engage in stewardship because of their ecological place meanings, or the value they ascribe to forested landscapes lacking human activity. Although non-indigenous, non-subsistence-based groups in developed countries are similarly driven to stewardship by their sense of place, a review of such place scholarship highlights place meanings and attachment as the motivating dimensions as opposed to place dependence. For example, qualitative inquiry among volunteer oyster gardeners conducting ecological restoration in New York City showed place meanings – including the "ecological and social elements of oysters, the city, and estuary" (Krasny et al., 2014, p. 16) – to be motivating. Place attachment predicted community-level

stewardship such as participation in initiatives around cleanups or protecting parks and nature refuges (Halpenny, 2010; Krasny et al., 2014; Payton et al., 2005; Vaske & Kobrin, 2001).

Conclusion

This chapter demonstrates that young Q'eqchi' women are motivated to engage in environmental stewardship practices such as tree-planting and collecting garbage due to subsistence-based needs, aesthetic values, a desire to avoid diseases, generativity, and worry. My findings suggest that young Q'eqchi' women have a sense of responsibility toward the land, other people, and other species, but that they also engage in unsustainable resource use and extraction. The data further highlight motivations shared by both young Q'eqchi' women and developed country audiences to engage in stewardship, specifically their sense of responsibility and sense of place.

Polarizing narratives about indigenous groups and the environment, and about indigenous versus non-indigenous populations, could obscure our understanding of stewardship across cultures and places. This could in turn limit our capacity to develop appropriate conservation strategies for areas of high biodiversity. My findings of complex stewardship practices and motivations among young Q'eqchi' women challenges some of the ways in which indigenous stewardship has been presented in the literature.

CHAPTER FIVE: WOMEN, AGROECOLOGY, AND LEADERSHIP FOR CONSERVATION (WALC) – EXPLORING PLACE-BASED EDUCATION AND POSITIVE YOUTH DEVELOPMENT THROUGH AN ENVIRONMENTAL EDUCATION PROGRAM IN ALTA VERAPAZ, GUATEMALA

Introduction

Place-based education (PBE) is an increasingly popular form of environmental education (EE) (Orr, 1992; Sobel, 1996; Thomashow, 1995). It is an experiential, multidisciplinary approach structured around the attributes of a given place. PBE involves young people in hands-on learning and action projects that equip them with knowledge and skills to address local environmental and social issues, and enhance their appreciation for the environment and community they inhabit (Gruenewald, 2003; Sobel, 2005; Woodhouse & Knapp, 2000).

Given its focus on youth engagement in communities, PBE overlaps with certain goals of positive youth development (PYD). PYD is a framework based on the premise that "youth are inherently prone toward optimal development and, given the necessary support systems, will become healthy and productive adults" (Browne et al., 2011, p. 72). This framework outlines the support systems young people require to experience positive mental, emotional, physical, and social growth, and to reach their full potential as adults (Eccles & Gootman, 2002; Roth & Brooks-Gunn, 2003; Youth.gov, 2016).

The goal of this paper is to explore how an EE program might incorporate elements of both PBE and PYD. The PBE and PYD literatures have evolved independently, and I argue that this continued, separate development would be a disservice to EE. EE strives to involve diverse participants of all ages in learning about and caring for the environment (NAAEE, 2016). Creating EE programs that deliberately combine the values of PBE and PYD could help EE achieve these goals as well as have positive impacts on underserved youth in particular.

My exploration of PBE and PYD in EE is part of a larger study of the Women, Agroecology, and Leadership for Conservation (WALC) program, facilitated by Community Cloud Forest Conservation (CCFC). WALC engages young Q'eqchi' women aged 11 to 29 years

old from rural, remote communities in the Alta Verapaz highlands of Guatemala. I initiated my research with a recognition of WALC's PBE personality, as the organization states on its website that "the Chilaxha' forest is the perfect venue for teaching and experiential learning. Thanks to the collaboration of local farm owners, CCFC has access to a host of outdoor classrooms and activities" (CCFC, 2016, p. 1). However, I did not identify its PYD characteristics until the data analysis phase of the study. It is important to note that CCFC, the organization that facilitates WALC, does not define the program as either PBE or PYD. The two research questions framing this investigation included: 1) what pedagogical strategies are used in the WALC program, and 2) what are the program outcomes for participants?

In this chapter, I review the PBE and PYD literatures, present the pedagogical strategies and program outcomes of WALC that emerged from my data, and discuss how my study extends the existing literature on EE. I explore how the themes that emerged from my research conducted among rural, indigenous women facing significant gender inequity in a developing country have broader applicability to EE. Finally, I propose an integrated framework that allows EE practitioners and scholars working in developing and developed countries to conceptualize, develop, and assess EE programs that incorporate elements of PBE and PYD.

Place-based education

Among the defining attributes of PBE (summarized in Table 5), most notable is that the pedagogy of such programs uses place as a living textbook and an interactive classroom to teach participants about their community and to foster appreciation for their local environment. Through hands-on environmental activities and projects outside the formal classroom setting, place-based educators attempt to direct the attention of youth to both the positive and negative elements of the natural, built, and social dimensions in their immediate surroundings (Gruenewald, 2003; Hutchison, 2004; Orr, 1992; Sobel, 2004, 2005). A personal

connection to place can help participants build a better understanding of the local subject matter and of the way global phenomena are manifested at the local level. Environmental facts can adopt memorable significance by no longer being detached from a tangible context (Dubel & Sobel, 2008; Smith & Sobel, 2010). The learning goes beyond basic plant and animal identification to include critical analyses of interconnected ecological relationships as well as the impacts of human behavior on different ecosystems (Orr, 1994).

PBE's emphasis on place has earned it the reputation of being "radical" compared to conventional education (Gruenewald & Smith, 2008; Gruenewald, 2003), which is critiqued for focusing on rote classroom-based lessons of standardized and de-contextualized curricula that are intended to equip students with skills to make them competitive in the global economy. Place-based educators believe formal education could instead empower individuals with tools to collectively impact the places they inhabit through activities such as testing local water quality and planting indigenous species, or volunteering at a soup kitchen and participating in a farmers' markets. PBE posits that such authentic interactions with the environment and community members allow young people to develop a meaningful appreciation for local issues. As these personal experiences in an important and familiar place multiply and take on increasing significance over time, they can inspire youth to contribute positively to the coupled socioecological systems around them (Bowers, 2008; Gruenewald, 2003; Sobel, 2004; Orr, 1992; Williams & Brown, 2012).

PBE educators strive to make learning environments experiential, multidisciplinary, and supportive of participants' positive intellectual and emotional growth. The experiential philosophy of PBE stems from the pedagogies of Dewey and Freire (Williams & Brown, 2012). Dewey championed the need for experiential education that connects the student to his or her environment (Theobald, 1997). Freire (1970) espoused the dual importance of *context* and *doing* as being key to impactful learning. Place-based educators want students to gain

knowledge and critical thinking skills in multiple subjects simultaneously, from social studies to geography to science, by doing and not by being told (Gruenewald, 2003). Like many youth-oriented programs, PBE literature acknowledges the need to be sensitive to young people's emotional welfare; for example, by helping youth establish healthy identities relative to themselves and their communities in this age of globalization (Stevenson, 2008).

Some claim that PBE could go even further to address local problems. Gruenwald (2003) suggests that PBE could do so by adopting a "critical pedagogy of place" (Orr, 1992) through which place is "decolonized," and "reinhabited." Decolonizing involves identifying local issues and the oppressive power structures that reinforce them, while reinhabiting refers to subsequent efforts to redefine and improve place. Combining place-based and critical pedagogies is one approach to challenging practices and assumptions inherent to conventional education (Gruenewald & Smith, 2008), as the "critical strand of pedagogy of place serves to bring local practices into the light of thoughtful question, while the place-based element serves to root such inquiry in the human and biotic communities in which schools physically exist" (Williams & Brown, 2012, p. 64). However, calls for decolonization and reinhabitation have been critiqued for implying that there is one standardized approach to both; for example, Bowers (2008) argues that these processes will differ according to each place and its specific cultural practices, land-use strategies, and memories of the past environmentally-destructive practices. Further, decolonization and reinhabitation are much harder to achieve in practice than in theory. Their goals conflict with the overarching purpose and structures of tradition school systems (Stevenson, 2008), as illustrated in an analysis of three school-based PBE case studies showing limited success (Smith, 2007).

Table 5: Place-based education setting and outcomes
(Adapted from Gruenewald, 2003; Williams & Brown, 2012; Stevenson, 2008; Woodhouse & Knapp, 2000)

Characteristic	Setting	Proposed Outcomes
Draws on attributes of place	Content developed around environmental/social dimensions of local context; engages participants in action projects that address local environmental/social issues; fosters participants' appreciation for place	Participants: learn about positive/negative aspects of place; feel connected to their place Place: participants impact environment and/or community positively through action projects
Equips participants with tools to contribute meaningfully to communities	Content equips and motivates participants to take action on behalf of their place	Participants: gain knowledge/skills needed to engage in action projects Place: participants impact environment and/or community positively through action projects
Experiential	Content creates opportunity for participants to engage with setting by exploring its flora/fauna and/or connecting with local people	Participants: experience authentic learning impactful over long term
Multi-disciplinary	Content integrates different aspects of place to explore science, social studies, and geography	Participants: gain knowledge in different subject areas and an understanding of their linkages
Promotes positive intellectual and emotional growth	Content aims to be engaging, authentic, inspire critical thinking, and create an environment where youth can develop positive identities with respect to themselves and their communities	Participants: retain knowledge, bolster critical thinking skills, develop positive identities with respect to themselves/communities

Positive youth development

The goal of PYD is to create learning environments that will allow young people to build self-esteem and confidence, build new assets and strengthen existing ones, develop the capacity necessary to achieve life goals, and maintain overall well-being as they move into adulthood (Lerner et al., 2005; Martenson & Phillips, 2012; Pittman et al., 2003). Programs structured around PYD philosophy reject a problem-oriented approach. Rather than focusing on preventing teen pregnancy, delinquency, or substance abuse, PYD programs aim to create learning contexts that value and develop youth assets (Eccles & Gootman, 2002; Roth & Brooks-Gunn, 2003; Youth.gov, 2016).

PYD learning environments are defined by clear, rigorous expectations for socially-acceptable roles and behaviors of both youth and adults. These spaces are inclusive and respectful, so that young participants feel physical and psychological safety, and comfortable engaging in individual goal-setting and group decision-making (Eccles & Gootman, 2002). PYD program leaders often balance high expectations for youth with demonstrations of care and emotional support, to create an atmosphere of "authentic care" (Delia, 2014).

PYD program activities are experiential, multidisciplinary, grounded in the local context, and aim to expand the horizons of young people by pushing them beyond their personal comfort zones. These activities provide opportunities for youth to connect with diverse members of the community and make meaningful place-based contributions through hands-on action projects. For example, PYD internship programs facilitated by the food justice education organization East New York Farms! (ENYF!) allow participants to learn multiple subjects and build skills by growing food for their community, working at the local farmers' market, and interfacing with intergenerational members of the public (Schusler & Krasny, 2010). Many ENYF! participants said in interviews that they saw themselves as being more mature and responsible, and having stronger interpersonal skills (Delia, 2014). Youth can feel more engaged in their own lives and invested in their place when they are involved in activities that allow them to take ownership, to feel that their opinions and knowledge are valued, and to experience the positive results of their actions (Browne et al., 2011; Eccles & Gootman, 2002; Evans & Prilleltensky, 2007).

The core PYD outcomes identified by Eccles and Gootman (2002) include 40 developmental assets, such as building self-esteem, confidence, leadership skills, and social competencies; developing healthy values and an ability to communicate productively; gaining a positive view of self and a sense of empowerment; becoming committed to learning and using time constructively; and forming healthy relationships with oneself and the community.

Others categorize the most important results of PYD as the six major "Cs": confidence, character, caring, competence, connection, and contribution (Lerner et al., 2005; Pittman et al., 2003).

PYD programs often dedicate particular attention to building young people's livelihood assets and practical knowledge that can help them in their daily lives. For example, one of Berkley Youth Alternatives' (BYA) main goals through the Community Garden Patch program in California was to create a community space for young people to gain job training, by learning gardening techniques along with job skills such as basic construction, landscape design, and entrepreneurship (Lawson & McNally, 1995). In Winnipeg, Manitoba, research conducted on the Youth for EcoAction (YEA) internship program also demonstrated an increase in participants' job skills savvy (Fulford & Thompson, 2013). Finally, a study of "LA Sprouts" – a gardening/nutrition program for Latino youth – showed improvements in the participants' understanding of important regular nutritional habits (Gatto et al., 2012).

PYD educators often face challenges with engaging and impacting young people due lack of interest and commitment. This can be the result of disempowerment experienced by youth at home, school, and in other social arenas (Camino, 2000; Yohalem & Martin, 2007). Thus despite concerted efforts to create positive learning environments and outcomes (summarized in Table 6), and evidence showing the "benefits of engaging youth in decision making, and the connection between youths' sense of engagement and overall PYD" (Browne et al., 2011, p. 79), it can be difficult for PYD programs to help participants achieve the desired development outcomes.

Table 6: Positive youth development programs – setting and proposed outcomes
(Adapted from Delia, 2014; Eccles & Gootman, 2002)

Characteristic	Program Setting	Proposed Outcomes
Safety (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which participants feel included, respected, and physically and psychologically safe	Participants are able to express themselves and take risks
Structure (Eccles & Gootman, 2002)	Program space strives to create a structure in which participants can set and achieve goals	Participants learn to set goals, make decisions, engage in group decision-making, and carry out activities that lead to their goals
Positive relationships (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which participants can build trusting, respectful relationships	Participants learn to communicate openly, honestly, and transparently, engage in team-building activities, and have fun together
Atmosphere of belonging (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which all participants feel they belong	Participants learn to interact with diverse audiences they might not otherwise spend time with, and have an opportunity to build their own strengths
Established expectations (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which participants understand the expectations regarding their behaviors and roles	Participants learn behaviors from the positive social norms that are reinforced
Atmosphere that supports making meaning contributions (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which participants can learn leadership and group decision-making skills, and make meaningful contributions to to the community	Participants gain self-esteem and confidence
Atmosphere that supports building skills (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which participants learn about responsibility as well as managing conflicts and new challenges	Participants build new skills
Community connections (Eccles & Gootman, 2002)	Program space strives to create an atmosphere in which participants can engage in community-based activities such as service learning & public forums	Participants feel integrated in their communities
New experiences beyond one's comfort zone (Delia, 2013)	Program space strives to create an atmosphere in which participants are pushed beyond their comfort zone by being exposed to new experiences such as field trips, conferences, and workshops	Participants broaden their perspectives about their relationship with the world, and gain confidence by succeeding at tasks they did not realize they were capable of before participation in the program
Atmosphere to get to know oneself (Delia, 2014)	Program space strives to create an atmosphere where participants can learn things about themselves they did not know before	Participants expand understanding of their own strengths, weaknesses, and needs

Research Questions

The research questions addressed by this contribution are:

(1) What pedagogical strategies are used in the WALC program?

(2) What are the program outcomes for participants?

WALC's curriculum content

WALC's four main curricular streams are the life project, agroecology-nutrition, conservation biology, and environmental stewardship. Here I describe each of these streams in keeping with the following characteristics of WALC: draws on the attributes of place; aims to create a positive learning environment; multidisciplinary and experiential in nature; aims to build knowledge and skills; and aims to bolster self-esteem, confidence, and leadership. The data presented here come from Rob and Tara Cahill, directors of CCFC who created and facilitate WALC, through informal debriefing sessions with them during the program, and the WALC curriculum schedule they provided. I also triangulated much of the data through observations made during the program.

WALC draws on the attributes of place

The *proyecto de vida* (life project) classes create a structured forum for participants to reflect on who they are relative to where they are. Four questions posed in the life project classes are used to frame all of WALC's activities, specifically: who am I, where am I, where am I going, and how will I get there? Having participants ask these questions allows them to think about the social and ecological dimensions of their local and regional context, the status and power of women in this context, and how they might overcome challenges unique to women around education and reproductive choices. Throughout life project classes, participants are also invited to think about their social networks: family, friends, village, school, church, coffee cooperative, and/or other associations. They are encouraged to explore

their indigenous and national identities, and how those relate to the larger cultural and socio-economic landscape. With respect to the environmental context, WALC uses Q'eqchi' spiritual cosmovision, or "Tzul-taka thinking," as the lens for discussing natural resources. Rob Cahill (2015) describes how:

> We make frequent reference to "Tzul-taka" thinking during our teaching. It is hard to say if it is a philosophy or a theology because the word can mean landscape and it can also mean God. Questions of water, soil, fire wood, seed and leaf are all many times more immediate to our students than they would be to a student in Canada or the US. From the landscape (or from the Tzul Taka as deity) comes our water, our air, the leaf is born of Tzul Taka, the seed a gift of Tzul Taka, trees, soil, fields and farms all are a part of the landscape and part of our physical context. Girls affirmations such as "I am corn. I am rain. I am the daughter of the Tzul. I am the child of the Taka," which are examples of the blending of "who am I?" with " where am I?"

WALC's other curricular streams draw on the attributes of place in different ways. Agroecology-nutrition classes develop locally-relevant knowledge and skills around cultivation and food that can help participants help themselves and their families, as well as other people, species, and the environment. Conservation biology classes use the immediate surroundings to teach participants about local ecosystems, the carbon and water cycles, and bird species. These classes also strive to cultivate an appreciation for the environment and its diverse species. The stewardship classes focus on environmental issues that impact participants and their families, such as overpopulation, deforestation, and intensive corn cultivation. These classes encourage participants to think about solutions to such challenges. For example, they can model stewardship practices such as tree-planting, raise awareness among family, friends, classmates, or community members, share knowledge acquired in the program, and/or initiate and lead community-based environmental action projects. CCFC teachers are careful to encourage young women to pursue projects that are feasible and within their power, starting with small steps such as talking to family or friends.

WALC students come from numerous villages located at varying elevations on several mountain ranges dispersed throughout a large region. CCFC's Ecology Center is located at a

lower elevation than any of these villages, which means certain species and environmental attributes differ from those that participants are familiar with in their own communities. Throughout WALC, however, these commonalities and differences are shared and discussed. For example, all conservation biology topics are presented in terms of the interconnections on several nested scales, from local, regional, national, to global.

WALC aims to create a positive learning environment

WALC strives to create a positive learning environment through clear expectation-setting, facilitating group cohesiveness, and by being culturally-sensitive to its participants. At the beginning of every WALC session, CCFC directors establish expectations for all participants, and what participants can expect of them. The expectations are high, but combined with authentic care and support (Delia, 2014; Eccles & Gootman, 2002). In 2013 and 2014, participants were divided into 8 groups with a leader assigned to each. All groups had to collaborate on daily tasks such as cleaning bathrooms, cooking meals, or collecting firewood. Through collective discussions facilitated in life project classes, participants were encouraged to share their challenges as women trying to *salir adelante* (get ahead) in a male-dominated culture, and at times they felt comfortable enough to talk or cry about personal topics (Pers. comm., 2015). Group activities require young people to work together, practice communication and healthy conflict resolution skills, establish openness and trust, and build new friendships (Martenson & Phillips, 2012). WALC is not only sensitive to Q'eqchi' cultural beliefs, but classes are taught in the participants' indigenous Mayan tongue rather than in Spanish (the public school language), which further contributes to an atmosphere of emotional and intellectual safety. The positive learning environment attributes of WALC are intended to be conducive to goals of building participants' confidence, self-esteem, and leadership.

WALC is multidisciplinary and experiential in nature

WALC is multidisciplinary and experiential in nature. Its four main curricular components strategically intersect and inform each other, and content taught in one class is often discussed again through the lens of another subject. Program activities are also experiential, as CCFC directors want to reflect the philosophy of "in doing we learn" (Herbert, 1874, p. 327). Instruction occurs through hands-on experiences of observing birds, planting trees, or learning new cultivation techniques, which allow both exploration of and interaction with the real world. WALC provides its participants with many opportunities to gain experience being the teachers and leaders themselves, and as much as possible CCFC directors let young women do the talking and knowledge-sharing throughout the program. One additional way they accomplish this goal is by facilitating a two-week, pre-WALC, leadership training for a smaller group of women who have often participated in the program before. These women become the group leaders throughout the full program, and are responsible for overseeing their group in carrying out daily activities and for teaching on occasion.

WALC aims to build knowledge and skills

WALC supports participants' knowledge- and skill-building from both an environmental and practical perspective. For example, tree-planting and sustainable cultivation techniques aim to enable and inspire participants to contribute meaningfully to the environment. WALC also helps participants develop knowledge and skills that are practical in their daily lives or can help them earn an income, such as the knowledge/skills focused on agroecology. Practices learned in the agroecology classes result in both environmental and practical benefits, given that participants gain the capacity to grow diverse crops which can provide them and their families with vitamins and reduce the need to purchase food from outside sources. The tree-planting skills they learn or hone in stewardship classes are also

practical, as the Q'eqchi' have a constant need for trees to build and maintain cooking fires. Finally, WALC teaches bread- and jam-making as part of the life project classes, and explores the income-earning potential of such skills. explain

The main focus of the life project classes is sex education and family planning workshops. Tara Cahill (2016) explains that:

> We are happy for women to marry and have their own children when they are legal adults, and have completed at least their high school education. Girls 13-17 years old having babies and getting married is a violation to their childhood, is medically dangerous and perpetuates illiteracy, poverty and malnutrition. We include human reproductive health in our program to empower girls through education to protect themselves and to make informed decisions about their own health and future family.

WALC aims to bolster self-esteem, confidence, and leadership capacity

The discussions facilitated in the life project classes, in combination with the positive learning environment characteristics and the many knowledge- and skill-building activities facilitated throughout the program, are intended to bolster participants' self-esteem, confidence, and leadership capacity. Themes presented in the life project classes at the beginning of the program, such as women's rights and self-worth, are intended to permeate all other classes, so that participants feel empowered to apply knowledge they are acquiring and become leaders of positive change in their villages.

WALC's outcomes

The following section describes the outcomes of WALC, organized around the following participant experiences: gain knowledge and skills that enable them to make meaningful community contributions; gain knowledge and skills relevant to daily life and earning an income; build confidence and self-esteem; and gain an appreciation for aspects of the environment. The data presented here come from the research participants, and I use the voices of several individuals for illustration.

Participants gain knowledge and skills that enable them to make community contributions

The data suggest that by participating in WALC, young women gain knowledge and skills that enable them to make meaningful community contributions, to both environmental and social issues. When participants were asked where they had acquired information about environmental issues, the importance of helping the environment, and/or how, they mentioned their families, schools, churches, and WALC as sources. WALC is sometimes described as the primary source, but often the program appears to reinforce stewardship messages that participants have learned from other sources, about the importance of planting trees, collecting garbage, not harming animals, or using resources wisely. For example:

> *They have told us in school, and I'm also learning here. I'm hearing that it's not good to cut down many trees, that we should also plant more trees.*

In addition to enhancing or reinforcing existing knowledge/skills, the program equips participants with knowledge/skills needed to adopt stewardship practices they said they did not or could not undertake prior to WALC, such as tree-planting:

> *Even though they have talked about it in my community, where I learned about planting trees was here* [in the program].

Participants felt WALC prepared them to organize a formal talk at school or church to teach others environmental knowledge/skills, or share what they had learned about women's rights and encourage others to pursue an education. Many discussed this information with others through one-on-one interactions, applied new knowledge/skills such as sustainable cultivation techniques on their own, or decided to plant more trees. Those who said they had never undertaken any of these types of actions felt motivated by WALC to do so in the future.

Participants gain knowledge and skills useful in their daily life and relevant to their ability to earn an income

WALC participants said they learned how to plant new crops and techniques such as planting on level contours and creating organic fertilizer, as well as the importance of and

nutritional benefits from eating a variety of foods beyond corn and beans. They felt motivated by WALC to eat less junk food like *"tortrix"* (chips). Women said they had or would encourage others to eat healthier food and avoid junk food. Such knowledge/skills provide practical daily benefits, and participants said they shared such information with others (as corroborated by interviews with family members), or intended to do so in the near future. Not only did these classes appear to be the most enjoyable and impactful of all WALC's classes, but they were the strongest attraction to new participants, and drew past participants back:

> (Why did you want to participate in the program this year?) *I just needed to learn more about agriculture, for that reason I came. I want to teach my community, or if not, my family.*

Past participants were most likely to talk about these classes by way of encouraging others to participate:

> (Why did you want to participate in the program for the first time this year?) *My family member* [a young woman who participated in WALC the previous year) *told me about the program, and explained that I would learn many important things here, like about planting. And it's for that I came, and also my father didn't deny me from coming.*

The environmental stewardship classes also cultivate practical skills that incentivize tree-planting, which in turn has environmental benefits:

> *Yes, we planted them* [trees]*, but not trees that are especially useful for us. So before maybe we planted trees that we couldn't take advantage of for an economic income. Now we are planting cherry trees, and before we only had very few cherry trees, now we are planting a lot. Because they will help us one day when they have fruit, we can sell them or eat them.*

However, some individuals admitted that it was too difficult to apply certain knowledge, such as grafting fruit trees. They attempted to implement this practice but did not succeed.

While the data do not reveal if WALC is helping participants gain a meaningful income, they show that many women feel more motivated to stay in school as a result of the life project classes compared to how they felt before the program. With more education,

women have a better chance of earning an income. Participants also said the life project classes afforded them information about family planning that they did not have before.

Participants build confidence and self-esteem

The life project classes inspired participants to think more highly of themselves and their own capabilities as young women:

> *I think here I have learned who I am, and getting to know who I really am, that has helped me have more ideas and I will be able to defend myself from any obstacle that I will encounter in my entire life.*

These classes either reiterated, or taught them for the first time, about their rights as women to acquire an education, which in turn helped motivate them to stay in school:

> *They have also told us, the women, we have the right to study, and not just men should study. That's where I learned that we are equal.*(What things did you learn last year in the program that you have applied in your own life?) *Here they taught me that I should study, and I had many ideas that helped me study, so in some moment decided to keep studying, but here they motivate me, and for that reason I'm studying.*

Women said that before participating in WALC they did not feel confident enough to talk to others about environmental issues and how to help the environment, but as a result of the program they felt capable of encouraging others to stay in school. They felt motivated to share their new knowledge with others:

> *What I am now learning, what I learned in the program, is about our environment. I am realizing, during this program, it isn't good what we are doing, we are mistreating our environment, for example by cutting down trees. And I can't lie, because we have also cut down trees... I think those are the experiences I'm acquiring in this program, and I hope that when I get back to my village I can share my knowledge with others.*

Although WALC creates many opportunities for participants to gain leadership skills, I did not collect data on whether the program helped them feel or act more like leaders.

Participants gain an appreciation for aspects of the environment

Participants said they gained new knowledge about birds, and/or formed a new perspective on birds as a result of WALC. Some said they had never noticed birds before, and now viewed them with appreciation and admiration:

> *I didn't know anything about birds. But for that since I arrived there* [in the program] *I liked them.*

> *Something new for me is the observation of birds, because now we can use binoculars.*

They may have even harmed birds in the past by throwing rocks at them, but no longer wanted to do that. Others talked to their younger siblings about not harming birds, and some described their intent to talk to others about not harming birds:

> *Yes, because sometimes my siblings have thrown rocks at birds, but I have talked to them.* (Have they stopped throwing rocks at birds?) *Yes, because I have explained to them that it's important to respect the lives of birds.*

> *I know that many people use slingshots to kill birds, and also some use guns as well to kill them. Some people use them still and kill many birds. So what I should do now is tell them it's not good what they are doing, and animals also form part of our life…*

Although the data above suggest that WALC participants became more motivated to protect the environment and capable of doing so, individuals did not necessarily become more appreciative of the environment overall as a result of their participation in the program.

Table 7: Summary of WALC outcomes

Outcome	Life project	Agroecology-nutrition	Conservation biology	Environmental stewardship
Participants gain knowledge and skills that enable them to make community contributions, to both environmental and social issues	• Learned the importance of women's rights and education • Already shared this knowledge with others or wanted to in the future	• Learned and implemented sustainable planting techniques • Already shared their knowledge about sustainable planting techniques with family and friends	• Gained new knowledge about and appreciation for birds • Already encouraged younger siblings or other people to not harm birds, or wanted to in the future	• Wanted to share their knowledge and skills with others • Organized/wanted to organize tree-planting or garbage collection events with their friends, family or community members
Participants gain knowledge and skills that are useful in their daily life and relevant to their ability to earn an income	• Wanted to stay in school, which could lead them to better jobs than they would have without an education • Learned bread-baking and jam-making skills which could help them earn an income	• Learned and applied cultivation skills that they find useful and beneficial in their daily lives	No comments	• Learned how to plant and/or graft trees
Participants build confidence and self-esteem	• Motivated to stay in school, or want to delay getting married in order to stay in school longer • Learned the importance of women's rights	• Felt good about all the knowledge they learned and their ability to share it with others	• Felt good good about the knowledge they learned and their ability to share it with others	• Felt good about the knowledge they learned and their ability to share it with others
Participants gain an appreciation for aspects of the environment	No comments	No comments	• Gained an appreciation for birds	No comments

Discussion

Three major themes emerge from the findings about WALC's pedagogical strategies and outcomes. First, the agroecology-nutrition classes are a compelling "hook" for attracting WALC participants. Second, WALC appears to bolster participants' knowledge/skills as well as their confidence and self-esteem. It further appears that the enhancement of both areas *simultaneously* equips young women to undertake meaningful environmental action and to make positive social contributions to their communities. Third, these findings reflect an integration of PBE and PYD, which has larger implications for EE theory and practice.

The knowledge/skills gained in WALC's agroecology-nutrition classes appear to be the most impactful and appealing part of the program, arguably because of their relevance to participants. Culturally responsive teaching strives to acknowledge the sociocultural realities of the students (Gay, 2000), by demonstrating how academic content embedded in experiential environmental lessons can be applicable to participants' lives (Stern et al., 2010). Such teaching approaches are important in both developing and developed country settings. WALC's agroecology-nutrition component is contextually-sensitive by virtue of its combined PBE and PYD qualities: it addresses the participants' place-based needs through the development of practical knowledge/skills that can directly benefit them and their families. The agroecology knowledge/skills are largely transferable from the Ecology Centre to participants' communities, though a few young women did note that the micro-climate of their village might have impaired their ability to cultivate a crop or graft a certain species of trees successfully. WALC also recognizes that participants come from families with limited financial resources, where young women are often expected to stay home helping their mothers. WALC's intended participants would likely have difficulty receiving permission to attend an EE program that lacked practical benefits. It is noteworthy that the opportunity to

learn about cultivation appears to be a stronger incentive than the scholarship, and a potentially more powerful justification for participation when seeking parental permission.

Despite the frequent call made by environmental practitioners and scholars of the need to reach more underserved, diverse audiences, relatively few examples of culturally appropriate approaches to EE exist (Bengston, Schermann, & Hawj, 2012). In an evaluation of the approach to environmental education among a diverse audience attending a residential program at the NorthBay Adventure Center in Maryland, students demonstrated enhanced environmental responsibility, leadership capabilities, and character development in the three months following their participation. This success was attributed to the fact that NorthBay's program adhered to a culturally-relevant definition of environmental responsibility, sought both environmental and PYD outcomes, and adopted a constructivist approach to student empowerment (Stern et al., 2011). A study in Hawai'i examined the impacts of an environmental education program among rural youth. The authors investigated the experiences of 12 participants to determine if they had acquired local environmental knowledge, and whether their views of the natural world were affected by the integration of cultural values and knowledge. Their findings suggest that:

> novel place-based experiences helped facilitate an emotional connection to participants' local natural world, which led to increased knowledge of natural and cultural resources… [and that] integrating cultural information into the program was found to contribute to participants' knowledge gain and overall perspective on nature, thereby serving as a valuable complement to the typical focus on scientific and biological content. (Thomas, Teel, & Bruyere, 2014, p. 64)

WALC participants appear to feel an increase in their motivation and in perceived self-efficacy to undertake environmental action. Prior to WALC, some participants said they felt limited in both knowledge and confidence necessary to talk to others about environmental issues and solutions and to teach others stewardship practices like tree-planting. By participating in WALC, they felt more capable of carrying out such activities because they had gained new knowledge/skills as well as confidence. This mirrors PBE's emphasis on

developing knowledge/skills that enable participants to help the environment (Gruenewald, 2003; Sobel, 2005; Woodhouse & Knapp, 2000) and PYD's goal of bolstering young people's confidence (Lerner et al., 2005; Martenson & Phillips, 2012; Pittman et al., 2003). Some participants described environmental action they had already undertaken as a result of WALC, such as organizing a talk at school or church, sharing their knowledge with others one-on-one, or helping local birds. However, some data about confidence gain through WALC only reflect participants' behavioral intention, and do not elucidate what environmental activities they *actually* engaged in upon returning to their villages.

As a result of WALC, some participants said they now pay more attention to birds, want to avoid causing them harm like they did before, and discourage others from harming birds. Birds can easily be seen throughout my study site, as Alta Verapaz has high avian diversity (Renner, 2003), but WALC might be successful at inspiring its participants to see these species in a new light because the program formalizes the observation and learning experience through a PBE approach. Promoting care for charismatic species has motivated environmental behaviors in other settings; megafauna such as whales or pandas have been especially used by environmental educators to capture the public's imagination and motivate conservation action (Barney et al., 2005). However, studies also underscore the appeal of birds (Clucas et al., 2008; Norris & Pain, 2002; Schlegel & Rupf, 2010; Sekercioglu, 2012; Verssimo et al., 2009). The awareness of and appreciation for birds developed *in situ* at the Ecology Center appears to be transferable to the species found in participants' communities. This outcome also reflects PYD's goal of bolstering participants' confidence so they feel capable of advocating on behalf of issues. Fostering positive attitudes and behaviors is significant in the Neotropics, a region where birds are often killed by young people's slingshots or hunted by adults (Sekercioglu, 2012).

PBE is critiqued for privileging the local to the detriment of holistic understandings of how issues are interconnected on regional, national, and global scales (Locke, 2009; Williams & Brown, 2012). The transferability of knowledge, skills, awareness, and/or appreciation from the Ecology Center to participants' villages acknowledges the call for place-based educators to facilitate environmental learning and action that occurs in one setting, and bolsters knowledge and appreciation around that specific setting, but allows participants to connect and comprehend local issues and concepts in relation to both other places as well as the broader socioecological context (Stedman & Ardoin, 2013). The fact that participants' overall appreciation for the environment did not appear to change as a result of the program will be examined in the Conclusion Chapter.

Many WALC participants not only feel more equipped to undertake environmental action, but have increased capacity to make social contributions as well. Gaining new cultivation skills is significant given that "women in developing countries play a vital role in meeting the food and nutritional needs of their families through food production, economic access to food and ensuring nutrition security of family members" (Okoli & Umeh, 2002, p. 45). WALC participants implement nutritionally-beneficial planting techniques themselves and share the knowledge/skills with others, as corroborated by family members who described the knowledge/skills their daughters, sisters, cousins, or friends taught them upon returning from the program. Such findings suggest that supporting intergenerational and intercommunity knowledge/skill transmission has positive ripple effects (Vaughan et al., 2003). This is important in settings such as my study site where access to education and resources is limited. However, it also matters in non-remote settings that have more resources. In both contexts, EE program participants can gain recognition from others in the community as knowledgeable sources of relevant environmental information. Such recognition could help foster participants' environmental identity, and their role as the future "thought leaders" in

their communities, and thus further motivate them to engage in positive environmental and social action (Stapleton, 2015).

WALC appears to contribute to a transformative shift in how young women perceive their own roles in society. As a result of the program, participants said they felt more motivated to stay in school, delay marriage, and have fewer children. This could have positive social and environmental impacts over the long-term, such as slowing population growth. However, despite data suggesting that women *intend* to undertake such action, information on how many women follow through with these decisions is required to assess the tangible impacts of the program over time, and how this could in turn impact Q'eqchi' communities and the environments they inhabit on a regional and national scale.

An integrated framework of PBE and PYD for EE scholars and practitioners

The WALC data have implications that can extend the EE literature. I embarked on my research viewing WALC as an example of PBE, but the emergence of PYD themes through the data analysis led me to consider how integrating elements of PBE and PYD in EE programs can support various outcomes, a topic I will explore through a proposed theoretical framework.

PBE and PYD programs both have the potential to impact their participants, the local community, and the environment over the long-term, but the literature suggests they have different priorities in the short-term (Browne et al., 2011; Pittman et al., 2003; Schusler & Krasny, 2010). PBE programs emphasize capacity-building that enables participants to help their environment and communities, which is in turn intended to foster their individual development and growth. PYD programs typically prioritize young people's emotional growth, which contributes to overall community well-being. Staying positively engaged in their communities can help youth avoid paths involving drugs, alcohol, and/or violence. In

short, PYD wants to help participants help themselves, and PBE wants to help participants help the environment and their communities; however, both ultimately aim to have positive impacts on an individual and community level.

Integrating PBE and PYD approaches into EE program content and delivery could help EE achieve its goal of engaging diverse audiences in environmental learning and stewardship, as well as strengthen existing capacity to help youth achieve emotional and intellectual growth. In recent years, many PYD programs have adopted an environmental focus, and the literature highlights the effectiveness of stewardship activities in achieving desired development outcomes as well as fostering the participants' love of nature and motivation to take environmental action (Browne et al., 2011; Pittman et al., 2003; Schusler & Krasny, 2010). Martenson and Phillips (2012) suggest:

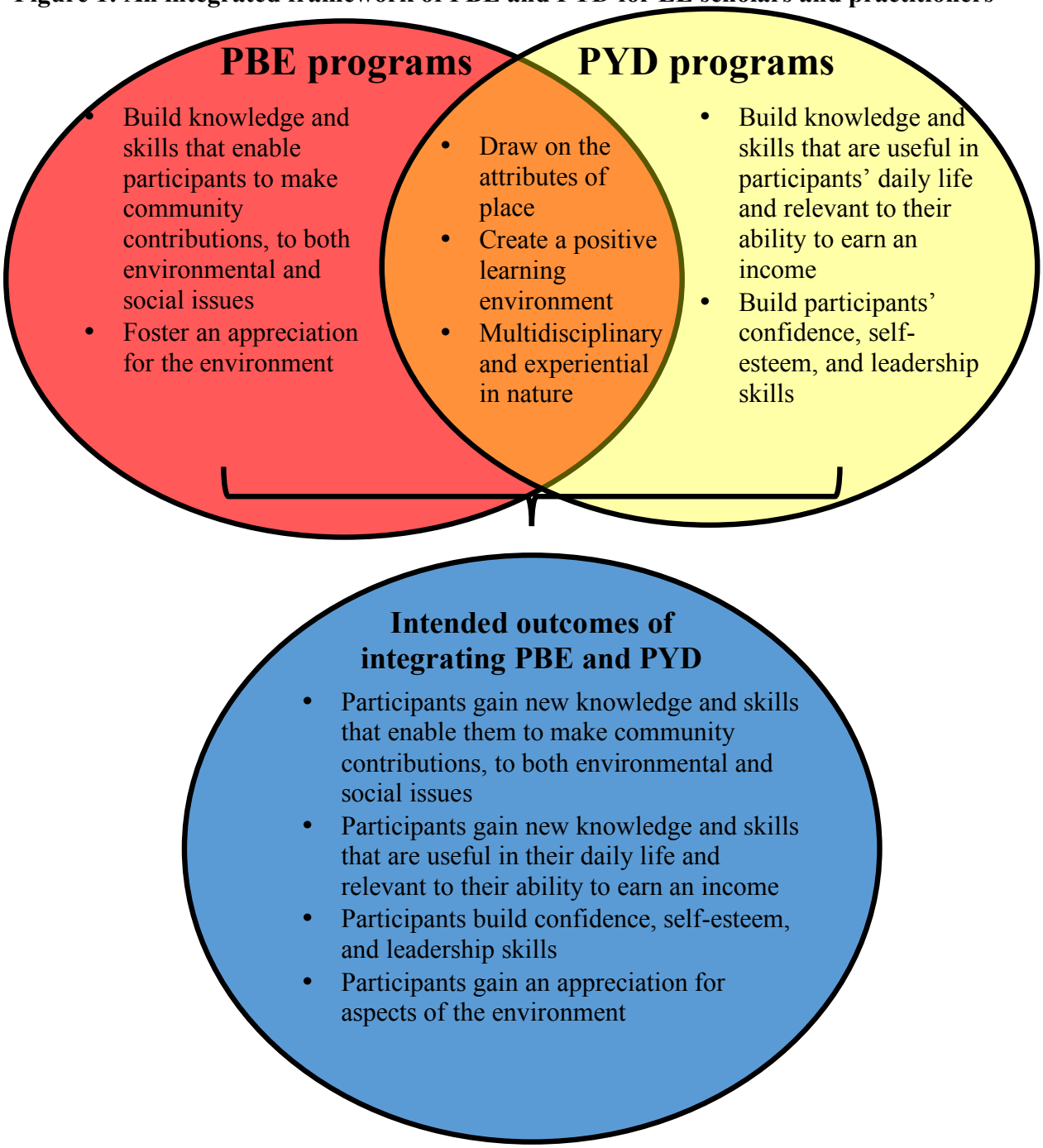
> EE and PYD serve each other's ends: effective stewardship is achieved only through the development of skilled and devoted problem-solvers, and healthy maturation depends on opportunities to explore and work as a team. As youth build a life-long commitment to themselves, to caring for their lives and the people around them, they build a sustained relationship to the natural environment, and find self-worth in making the world a better place. (p. 40)

PYD's emphasis on building confidence and capacity is consistent with work in EE demonstrating that self-efficacy is critical in equipping young people to take environmental action (Jensen & Schnack, 1997) and to engendering pro-environmental behavior (Hungerford & Volk, 1990; Simmons et al., 2004). PYD programs' focus on practical knowledge and skill-training has potential to attract the participation of youth who might be more interested in gaining tools for daily life and for earning income, compared to helping the environment. In many cases, EE emulates PBE in its dedication to providing young people with hands-on, community-based action project experience (Tali Tal, 2004; Vaughan et al., 2003; Volk & Cheak, 2003), and could continue to do so. The dual development of

participants' knowledge/skills and their confidence/self-esteem can help support their engagement in environmental and social action.

My findings and the literature inform my integrated framework (Figure 1). Both PBE and PYD aim to create positive learning environments for youth, but PYD offers detailed insights on this subject that could be adopted by EE practitioners. Certain elements of PBE and PYD are less relevant in an integrated framework seeking to inform EE practice. PBE tends to explore environmental science themes (Semken & Freeman, 2008), while a review of the PYD literature suggests that this topic is not a priority. Given that environmental knowledge does not necessarily lead to desired EE outcomes such as capacity for environmental action (Kollmuss & Agyeman, 2010), the framework does not emphasize environmental science learning. Further, although both PBE and PYD equip participants with general knowledge, this framework focuses on knowledge that is relevant to participants' daily lives or to their ability to make environmental and social contributions.

Figure 1: An integrated framework of PBE and PYD for EE scholars and practitioners



Legend
Red: Attributes that are dominant in or specific to PBE programs.
Yellow: Attributes that are dominant in or specific to PYD programs.
Orange: Overlapping attributes of PBE and PYD.
Blue: Intended outcomes of an EE program that integrates both the shared and separate attributes of PBE and PYD programs.

Conclusion

The pedagogical strategies of the WALC program help young female Q'eqchi' participants develop new knowledge/skills as well as build greater confidence and self-esteem. This in turn increases their capacity and motivation to share their knowledge with others, stay in school, implement cultivation and tree-planting practices that benefit their communities and the environment, and undertake other environmental and social action. Future research could address the gaps of this study by examining the long-term impacts of WALC and by deepening inquiry around the transformation of participants' behavioral intention into tangible action.

The emergence of both PBE and PYD themes in WALC findings provoked reflection about how deliberately combining the elements of these two approaches could extend the EE literature. I propose an integrated framework in order to illustrate how adopting both the shared and separate attributes of PBE and PYD could help EE programs support various outcomes, particularly among diverse, underserved youth in both developing and developed countries.

CHAPTER SIX: CONCLUSION

Here I will discuss three crosscutting themes from the collective body of work: the influence of biophysical place dimensions on young Q'eqchi' women's pragmatism, the tension between young Q'eqchi' women's possibilities and barriers, and broader implications for the field of EE. These themes speak to the overarching study goals, which include reflecting on how increasing our understanding of young Q'eqchi' women can help us comprehend the current social and environmental challenges they face and opportunities for positive change; how EE programs such as WALC, which blend PBE and PYD approaches in order to benefit young people and the environment, can help address these challenges; and how the knowledge gained through this research can be applied to initiatives reflecting similar challenges and opportunities in other rural, biologically-diverse regions of the world inhabited by indigenous groups.

I reflect on how this research highlights methodological, epistemological, and ontological considerations for conducting sociological research among an indigenous group. I discuss the challenges associated with this work, and conclude with recommendations for future applied international development work as well as academic scholarship.

Crosscutting themes

The influence of biophysical place dimensions on young Q'eqchi women's pragmatism

Biophysical place dimensions appear to have shaped young Q'eqchi' women's pragmatism. Although sociocultural place dimensions have shaped this pragmatism as well, I will focus on how my data underscore the biophysical influence. Specifically, young Q'eqchi' women's sense of place as well as their stewardship motivations reflect practical place dependence needs, which in turn relate to the natural resources in their surroundings. Further, WALC's agroecology-nutrition classes, directly applicable to the Q'eqchi's ecological context, appear to have the greatest appeal to and impact on program participants.

Understanding the relationship between the young Q'eqchi' women's pragmatism and their biophysical place could help us comprehend potential future threats to their way of life, as well as the opportunities to help address these issues.

The Q'eqchi's ongoing subsistence-based lifestyle depends on their immediate environment, which means they will be vulnerable to negative ecological change. According to scientific data, as well as the Q'eqchi' themselves, the Alta Verapaz environment is indeed changing. Slash-and-burn agriculture, primarily for corn cultivation, has led to extensive deforestation and soil erosion (Central Intelligence Agency, 2013; Renner, 2003; Rieckmann et al., 2011). Young Q'eqchi' women speak openly about the problem of deforestation, but do not discuss the negative impacts of corn, possibly because growing corn is a longstanding Maya sociocultural norm and practice (a fact that also reflects the Q'eqchi's ecological context).

In the face of environmental degradation, one approach to effecting positive change could be to increase the Q'eqchi's strategies for maintaining food security. Such strategies could include stewarding the soil in various ways and using it to grow diverse types of crops beyond corn and bean. The Q'eqchi's current stewardship practices appear to center around trees rather than soil. In this study, young Q'eqchi' women described practices such as collecting garbage or keeping trash off the streets as ways to avoid contaminating the soil. Overall, however, they seemed more motivated to preserve or restore the presence of trees, which could be because they recognize the link between healthy trees and soil, and not because they prioritize one resource over another. This is noteworthy given that access to cultivable land emerged as the most significant component of young Q'eqchi' women's place dependence in this study. Although it is primarily Q'eqchi' men involved in agriculture, women also appear to want to contribute to household food security in ways such as planting small garden plots around their homes.

My data suggest that by integrating PBE and PYD approaches, WALC models how EE programs can create an opportunity to address pragmatic, place-specific environmental needs. WALC's classes develop knowledge/skills that expand young women's capacity to grow diverse crops and to undertake soil-related stewardship practices (i.e., creating organic compost and planting on level contours), and these lessons appear to become an additional stewardship motivation. The program is not the first place that all participants learn about the importance of stewardship or gain the necessary skills to carry out stewardship activities, as some acknowledged learning about these topics from their parents, in school, or in church. In such cases, WALC reinforces stewardship messages. Often, it bolsters participants with new information and/or confidence that they did not have before attending. WALC's lessons also become a stewardship motivation for alumni's family members or friends, who describe how a sister or classmate taught them stewardship knowledge/skills learned in the program.

For EE programs to help address environmental issues and needs in other places, practitioners could similarly assess the socioecological landscape when developing lesson plans. WALC attracts participants through its focus on relevant subjects, and in doing so creates a space to engage young women in learning around EE-related topics that they might not otherwise be exposed to. It is possible that young women living throughout many regions similar to Alta Verapaz would not be able to participate in an EE program that lacked real-world benefits, thus EE practitioners across developing and developed countries could consider what types of practical subjects would be appropriate for attracting their specific underserved audiences. Certain subjects might be relevant to youth in both types of contexts. For example, the appeal of agroecology for young Q'eqchi' women in rural Guatemala likely resonates with young people of both genders in underserved areas of large American cities, given that urban community garden-based PYD programs are growing in popularity (Fulford & Thompson, 2013; Rahm, 2002).

Tension between young Q'eqchi' women's possibilities and barriers

The tension between young Q'eqchi' women's possibilities and barriers is another theme that threads through this entire body of work. I examined the oppositional pull of place anchors and magnets, as well as the potential struggle between collective Q'eqchi' place identity and changing female identities. I explored the stewardship practices that women have the power to implement, but also note the barriers. Some barriers appear to be positive, such as a lack of time due to the need to study, while other barriers highlight women's limited access to land and information. Further, although young Q'eqchi' women can and do engage in stewardship practices, the gender inequality they experience contributes to large family sizes, which in turn creates population growth rates that appear to outpace stewardship efforts. Finally, I described other types of practices women are willing and able to undertake if given the chance to develop certain capacities; however, minimal opportunities exist for women to develop such capacities. Though WALC participants appear to share knowledge/skills with family members, including fathers, it is unlikely that in the short-term women will be able to effect structural changes within the male-dominated domains of agriculture and resource use.

In spite of the barriers women currently face, the data also suggest that their range of possibilities is slowly evolving and increasing. Women might be struggling with the oppositional pull of anchors and magnets while still actively expanding their own horizons. Some appear to be pushing back against the collective Q'eqchi' place identity in order to achieve higher education and *salir adelante.*

WALC lessons seem to enhance participants' overall capacity and motivate young women to stay in school, modeling how EE can support positive socioecological change. Past WALC participants are positively influencing young women who have not participated in the program, such as by encouraging them to stay in school and by sharing their knowledge/skills. Over time this could help dissolve the anchor-magnet tension by inspiring greater mutual

support among community members to help each other *salir adelante*, which might in turn decrease the conflict between crabs trying to climb out of the bucket and the crabs trying to keep everyone down in the same place. However, there could also be inherent challenges with this shift; for example, as women acquire more power and resources, and are able to seek out diverse opportunities, they may be inclined to settle in large cities such as Cobán. This parallels challenges in other settings in the developing and developed world, where rural communities shrink as youth leave to access better jobs in urban centers (Pretty et al., 2003).

Implications for the broader field of EE

This dissertation has broader implications for the field of EE. First, it adds weight to the argument that adopting pedagogical approaches sensitive to the complex lived realities of participants can enhance the potential for EE programs to both engage specific audiences, and achieve multiple outcomes. In the developing country context, though I was unable to find literature specifically addressing culturally-sensitive approaches to EE, "most studies conclude that enabling factors such as education… lead to women having more choice, options, control, or power over their life conditions" (Narayan-Parker, 2005, p. 81-82), which can in turn have positive socioecological impacts such as reduced fertility rates. By addressing important social and environmental needs, as described above, WALC models how *environmental* education can be an enabling factor.

Second, WALC's limited influence on participants' sense of place contributes potential insights to the overlapping realm of EE/PBE and place scholarship. My research participants responded similarly to place item questions whether they had taken part in WALC or not, and this could be the direct result of the Q'eqchi's pragmatic relationship with their ecological context. Attempting to ascertain a change in WALC participants' feelings about place, when their lives are so influenced by and centered around the biophysical

characteristics of their local context, could be equivalent to expecting to impress other participants with the fact that the sky is blue. However, while place attachment does not appear to change as a result of WALC participation, some individuals seem to experience a change in their ecological place meanings. For example, they ascribe meaning to birds in their surroundings in a new way. This parallels Kudryavstev et al.'s (2012) findings that urban EE programs in the Bronx did not influence participants' place attachment, but did enhance their ecological place meanings. The authors further suggest that: "it is possible to assume that place meanings like 'The Bronx is a place to connect with nature' may foster such self-conceptions as 'I am a person who connects with nature in the Bronx,' thus contributing to nature conservation attitudes and environmental stewardship in the urban context" (p. 11). Although further studies are needed, such outcomes from research conducted in two very different locations suggest that EE programs facilitated in developing and developed country settings can influence ecological place meanings but not necessarily place attachment.

A review of the literature points to a recent increase in empirical research linking EE or PBE programs with place theory and research (Cincera et al., 2015; Kudryavtsev et al., 2011; Thomas et al., 2014). The continuation of this trend could help address critiques of PBE, including its dearth of empirical studies (particularly quantitative ones), a lack of a clear theoretical underpinning, and its historically limited engagement with place scholarship (Ardoin, 2006; Stedman & Ardoin, 2013; Stevenson, 2011). Some argue that due to PBE's nuances and ties to context, it is difficult to develop a rigorous framework for evaluating PBE programs (Nespor, 2008; Gregory Smith, 2012). However, the limited empirical research conducted has shown that PBE results in increased student academic motivation, engagement in learning, knowledge and skills, environmental awareness, and involvement in and appreciation for community life (Cincera et al., 2015; Duffin et al., 2004; Powers, 2004), all of which align with theory about intended PBE outcomes. The increasing cross-engagement

between PBE and place scholarship would generate further empirical data that could add weight to the goals articulated by PBE literature, and offer PBE a stronger theoretical basis.

Finally, this research points to the potential of further exploring how EE programs incorporating PBE and PYD approaches could help enhance outcomes, as described through my proposed theoretical framework. This integration could help EE achieve its goal of engaging diverse audiences in environmental learning and stewardship, as well as strengthen existing capacity to help youth achieve emotional and intellectual growth, in both the developing and developed world. The WALC findings underscore how simultaneously bolstering knowledge/skills and confidence as a result of combining PBE and PYD strategies might be particularly effective at equipping participants with the self-efficacy needed to undertake environmental and social action.

Methodological, epistemological, and ontological reflections

I explored a new approach to investigating sense of place among an indigenous group, by combining a positivist framework with qualitative methods. Although I embarked on the research with pre-determined place constructs, the themes that emerged are still a direct reflection of the socioecological setting. This aligns with other place scholarship demonstrating that constructs will have place-specific manifestations, as meanings and attachments are a product of and grounded in a particular context.

My methodology could be the cause of the lack of spirituality themes in the data. It is possible that because I did not ask participants direct questions about the role of spirituality in their connections to place and stewardship motivations, this was not described. Or, the potential gap could be the result of my youth-dominated research sample, given that young Q'eqchi' may not have the same knowledge about or interest in the spiritual traditions. However, none of the older interviewees talked about their cosmovision, either. Perhaps they

would have been reluctant to share this information even if I had explicitly asked about spirituality, given possible trust issues discussed in Chapter Three. If we set aside concerns about whether spirituality could have emerged with a different cross-section of the Q'eqchi' population or through another research approach, it is worthwhile that this uncommon type of indigenous study produced different insights.

Despite the number of participants interviewed as part of this study, from a variety of different villages dispersed over a large area, many responses in my data set were similar. As such, the quotes used to illustrate findings throughout each chapter often represent large swathes of individuals. This limited variation could be the result of a cultural emphasis on the collective as opposed to the individual within small, remote communities. It is also possible that the lower status and power of women in Q'eqchi' society creates an environment in which they believe it is important to act the same as others and express similar opinions.

My own ontological limitations likely influenced the study outcomes. Western and Q'eqchi' ontology might have overlapped most easily around descriptions and understandings of instrumental practicalities, and thus biased my interpretation and presentation of the data. Perhaps I missed subtle nuances in what I perceived to be straightforward responses, due to a lack of inherent knowledge about Q'eqchi' worldviews that can only be acquired by those who are deeply embedded in the culture. From my perspective, this research exposes young Q'eqchi' women's pragmatic side rather than their spiritual side, yet interactions between pragmatism and spirituality could be at play even though I believe they cannot be detected or understood through my findings. Although some of the findings point to a growing desire among many young women to *salir adelante,* the opposing pull of internalized sociocultural norms is likely far more nuanced than I have suggested here. I still believe my research gives a voice to the young Q'eqchi' women of Alta Verapaz, but the voice presented here elucidates

only certain aspects of their lives, and the framing of their stories reflects my Western interpretation of their experiences.

I recognize other instances where my own perspectives and feelings could have impacted the research process and therefore the overall findings. For example, given my Western conceptualization of time, I was always concerned about demanding too much time of a participant, especially after having arrived unannounced at a someone's doorstep. I would move through an interview with as much alacrity as possible in order to be respectful of their competing responsibilities, yet upon concluding the interview, some participants spent an additional half hour conversing casually with Elvira. I also acknowledge that at times I was more focused on making sure I could conduct all the necessary interviews within the many logistical parameters, rather than actively trying to be aware of what could be going on around me both in Q'eqchi' villages and at CCFC's Ecology Center. The research conditions were often physically and emotionally challenging, and these personal distractions could have further affected my self-reflexivity about how my own ontology might be influencing the research process as well as the outcomes (Carter & Little, 2007).

Challenges

Logistics

Throughout my research, I faced challenges with logistics and threats to validity. First, although I speak advanced Spanish, I learned only a little Q'eqchi'. Conducting interviews in a second language, with translation into a language I do not understand, then later transcribing the Q'eqchi'-Spanish translation into English, created potential for content loss and misinterpretation. It was difficult to understand responses from participants with limited Spanish who still insisted on answering me in Spanish. On the few occasions this occurred, I did not want to offend participants by asking them to speak in Q'eqchi' instead, so I gently encouraged them to speak in the language that felt most comfortable to them.

A second challenge was finding individuals willing to be interviewed within the given window of time. In the majority of villages, people invited us into their homes without hesitation, offering coffee and tortillas. However, in one especially remote village that had never had contact with CCFC, people were suspicious of us, which meant we spent a lot of time hiking around and explaining our purpose to women who ultimately did not want to be interviewed. This was discouraging given the logistics involved in travelling to a village and searching for appropriate individuals. We only had a limited window of time in each village to conduct both our purposive search as well as the interviews, given that there were few busses operating on unpredictable schedules. In many situations, we could not have walked all the way down from a particular mountain safely within daylight hours. Time was also a constraint during the WALC program, when all participants were living at the Ecology Center where I too was stationed. I had to be conscientious about not encroaching on mealtimes and activities, and recognizing that participants needed free time for personal tasks like hand-washing their clothes. I also had to plan interviews strategically around daily chores, as I could not interview girls on the days that their group was assigned to kitchen or tortilla duties.

Threats to validity

The potential threats to validity in this study concerned trustworthiness and power dynamics. It was sometimes difficult to ascertain if participants meant what they were telling me, or whether they were stating what they thought I wanted to hear. It is possible that my status as a white researcher could have influenced socially desirable responses (Wilhelm & Schneider, 2005). CCFC directors are American, and WALC participants might have interpreted our shared skin color as evidence that I am related to them, or that I am equally responsible for the program.

Participants may have believed that I wanted to hear how they live according to positive environmental values and engage in stewardship activities. For example, I learned from informal debriefing sessions with the Cahills that certain responses about stewardship learning and practices could be untrue. Participants sometimes said they learned about the importance of picking up garbage from WALC. The Cahills found this surprising, given that the only comment they would ever make about garbage was asking participants to not leave trash lying around. They were also skeptical about individuals who claimed to plant trees as often as they said they did, because this was not their impression from working with Q'eqchi' and spending time in their villages. Further, although many research participants spoke about the need to keep garbage off the ground, a number of homes I visited had noticeable trash lying around the property. Additionally, though people talked about the importance of not harming animals, I frequently (and sadly) observed dogs being struck with rocks or sticks.

I tried to address issues of trustworthiness by asking questions multiple ways, obtaining answers from multiple sources, and through member checks. For example, I triangulated the pedagogical strategies and impacts of WALC through interviews with participants, their family members, and non-participants, participant observations, and informal debriefing sessions with Elvira and the Cahills. With respect to sense of place, because I knew that spirituality could play a role, I spoke to Elvira and the Cahills about the fact that this theme did not emerge. Elvira felt that it was because I did not ask individuals directly about this topic. The Cahills agreed, and also felt that because young girls are not involved in the religious rituals around certain aspects of planting, these research participants would not be as likely to speak about the role of spirituality in sense of place.

I had to be reflective of the potential perceived power dynamics, and convey that honesty was appreciated and would not have negative consequences. As articulated by Laessoe and Krasny (2013) "both EE and international development share a concern about

power relationships, either between adults and children or between outsiders and the community members whom they aspire to help" (p. 13). I was concerned that my relationship with participants involved an unfair and unintentional power differential that could influence responses. I made a concerted effort to converse informally with WALC participants over meals, tortilla-making, and while birding, to help them feel more comfortable with my presence prior to our interview. I also asked certain questions outside of interviews as well, hoping that doing so in an informal manner would eliminate any potential pressure.

I wanted to minimize power differentials to the best of my ability so as to better co-create knowledge with my participants. I feel that I did this with Elvira and the Cahills through our informal debriefing sessions, but I did not create opportunities to debrief about my findings (and how they could benefit Q'eqchi' communities) with other individuals involved in my research, such as WALC participants, their family members, and women who have never participated in the program. However, I intend to return to Guatemala to share the results of my work with Q'eqchi' communities and CCFC, through an approach that creates participatory dialogue and can ultimately benefit the people involved in my research.

Recommendations for applied work

My findings point to potential recommendations for applied international development work that could benefit Q'eqchi' communities and the environments they inhabit. First, agroecology practices could allow the Q'eqchi' to better accommodate their opposing ideals around land-use – namely, their appreciation for both cultivation/resource extraction as well as beautiful natural landscapes. By implementing cultivation techniques that support a greater diversity of flora and fauna, the Q'eqchi' could create aesthetically pleasing landscapes that also provide necessary resources, thus satisfying some (though not all) of their place dependence needs as well as their ecological place meanings.

WALC models one approach to teaching agroecology practices, but another strategy could be to facilitate trainings directly within different communities themselves. In combination with practical skill-training, these workshops could create a forum for all community members to openly discuss how to best address the values they attach to place. Some of my research participants explained that they have in the past tried to talk about environmental degradation with their family and neighbors, or encouraged them to engage in stewardship such as tree-planting, but felt that their words fell on deaf ears. Some participants also felt that their words were not taken seriously because of their age (and perhaps gender, though they did not explicitly say this). Facilitating a formal public discussion about land-use interests could be a way to find strategies for addressing resource needs, environmental challenges, and potential social strife.

The tension between women's practices and constraints reinforces the need to make education as accessible as possible. Eliminating logistical obstacles could be an important first step toward this goal. For example, building high schools in villages that lack them would make it easier for those women who want to continue studying beyond elementary school but do not necessarily want to leave their village to do so, or do not have parental permission to study elsewhere (both situations reflecting the potential anchor-magnet dilemma). This is admittedly a large, structural change that would require a significant investment of time and money on the part of Guatemala's education ministry.

Structural solutions do not necessarily address constraints created by the anchor-magnet tension, given that even if a young woman was highly motivated to attend school she may not receive permission. As such it could be important for Q'eqchi' fathers – as well as mothers who want to keep their daughters at home for help or company – to be more widely involved in discussions about the many benefits of female education. Similar to the agroecology trainings proposed above, this could be facilitated through *in situ* community

workshops, or via radio, as many Q'eqchi' households appeared to have this technology. However, it is important to acknowledge that fathers and mothers may also be constrained by larger issues such as a lack of education, poverty, and family size.

The strategies described here could potentially be relevant to other indigenous groups living in similar contexts throughout the developing world. Findings about rural, subsistence-based indigenous populations living in areas of high ecological and cultural diversity, in combination with women in development (WID) literature describing the particular gendered challenges in such regions, suggest that many places struggle with an equally complex interplay of social and environmental factors. The recommendations presented here would need to be adapted to reflect the unique characteristics of any given setting, but they could help address certain overarching issues around land use and gender inequality that are found in other contexts.

Future research directions

Future studies of sense of place among the Q'eqchi' could investigate whether and how spirituality does continue to play an important role in their place meanings and attachments, by directly asking questions about this subject among a more diverse cross-section of participants. Research could also expand on this study by examining the long-term impacts of programs such as WALC; specifically, whether and how behavioral intent does indeed transform into action as a result of EE programs that incorporate elements of both PBE and PYD. Additionally, future research could deepen inquiry around additional proposed outcomes of the integrated framework, such as leadership skills.

Summary of research contributions

With a particular focus on young women, my dissertation used the conceptual lenses and literature of sense of place, environmental stewardship, EE, PBE, and PYD to explore

how the Q'eqchi' are shaped by their socioecological context. By investigating the Q'eqchi's conceptualizations of their place, I could identify several potential tensions. The dearth of spirituality themes allows for reflection on how this research extends place scholarship methodologically. Findings that the Q'eqchi' are most motivated to engage in stewardship because of their subsistence-based needs/place dependence, aesthetic value/ecological place meanings, a desire to avoid disease, generativity, and worry about the sight of deforestation and mismanagement of resources both align with and diverge from prior literature describing indigenous stewardship motivations. Finally, in exploring the pedagogical strategies and outcomes of WALC, I examine the potential for EE programs incorporating elements from both PBE and PYD to achieve certain outcomes. I propose an integrated framework to allow EE scholars and practitioners to develop and assess such programs.

An examination of these collective findings elucidated three crosscutting themes around the biophysical influence of place on young Q'eqchi' women's pragmatism, the tension between young Q'eqchi' women's possibilities and barriers, and implications for the broader field of EE in both developing and developed countries. The work presented here underscores the need to better understand the nuanced dimensions of indigenous lives, particularly the power and opportunities of women, in order to address both social and environmental challenges among similar groups leading a subsistence-based lifestyle in other biologically-diverse regions of the world. I contributed theoretical and methodological insights to scholarship around place, environmental stewardship, and EE, and offered recommendations for future applied work.

Closing

As populations continue to grow in the Q'eqchi' villages involved in this study, environmental threats to the biologically-diverse Alta Verapaz will increase. My dissertation underscores the need to acknowledge the evolving role of women in addressing long-term environmental sustainability and Q'eqchi' community viability in the Guatemalan highlands. The findings presented here help us understand how complex interacting factors can impact indigenous groups and shape their relationships with the environments they inhabit. This work also elucidates how EE that incorporates elements of both PBE and PYD can effect positive social and ecological changes in and beyond this context.

APPENDIX A. SEMI-STRUCTURED INTERVIEW GUIDE

2013

1. How old are you?
2. What grade did you finish this year?
3. Will you keep studying next year?
4. What grade did your parents finish?
5. Do they know how to read and write?
6. How many siblings do you have?
7. Is this the first time you are participating in the program?
8. So you participated last year?
9. Who told you about the program when you participated two years ago?
10. What most inspired you to participate in the program?
11. Did you know other girls that were participating in the program?
12. What other things did you learn during the program the last time?
13. Why did you want to participate in the program?
14. When you participated last time, did you teach your family things you had learned during the program?
15. What are your expectations for this program, for the next 25-days?
16. What do you want to do in your future?
17. What kind of degree do you want to earn?
18. What community are you from?
19. Can you describe your community a little, in terms of physical and social aspects?
20. What do you do in your community in a normal day?
21. What other natural resources does your family use?
22. Do you plant trees?
23. Where does your family get water?
24. What things do you like best in your community? What are your favorite parts of your community?
25. What things do you not like about your community?
26. When your family harvests, do you eat the majority at home or sell it in the market?
27. Now that you are here at the farm for 25 days, what do you miss most about your community? It can be social or physical aspects
28. What things are you already doing to help your environment?
29. Are there things you want to do in the future to help the environment?
30. Are there things you are doing for the good of your community in general?
31. Are there things you want to do in the future?
32. Are the majority of girls in your community studying, or no?
33. Do you know many people here in the program, this time who are here?
34. When you participate the last time, were you here with many girls from your community as well?
35. Are there other things you can tell me about your community, for example things you like or don't like?
36. Can you tell me anything else why you wanted to participate in this program?
37. What have you learned so far in this program? What new things have you learned?

2014

1. How old are you?
2. What grade did you just finish?
3. Will you keep studying next year? Why do you want to keep studying?
4. Why do you think studies can help you help others?
5. How many brothers and sisters do you have?
6. Are all of them studying?
7. Do your parents support the studies of all of her children, women and men?
8. What grade did your parents finish?
9. Why did you want to come back and participate in the program again this year?
10. What completely new things did you apply in your life after participating in the program?
11. Do you think women have the right to study? Why?
12. Where did you learn these ideas?
13. Are you planting trees? Why do you want to plant trees? Where did you learn to plant trees?
14. Are you collecting garbage that is thrown in the streets in your village? Why?
15. Do you sometimes harm animals or birds? Why or why not?
16. How have you encouraged others to take care of the environment? Why?
17. Why do you want to help the environment?
18. Why do you feel personally capable of helping the environment?
19. Do you think your actions can help the environment? Why or why not?
20. Why it important to you that there are trees in your village?
21. Where did you learn all of these things?
22. In your village are many people cutting down trees? Do you not like when people cut down trees? Why?
23. Do you like to see birds and animals in your village? Why?
24. Is it important to you that people don't harm birds and animals? Why?
25. Is it important to you that there is clean water in your village? Why?
26. In your village are many people polluting the springs? Why?
27. Is it important to you that there is not garbage all over your village? Why?
28. Would you not like if people threw garbage or polluted the springs? Why?
29. Have you spent time living outside of your village? Where and why?
30. Do you miss your village a lot when you are not there? Why?
31. Can you be yourself in your village, do you feel comfortable acting like yourself? Why or why not?
32. How is your village part of your personal identity?
33. How is your village the best place to do the things you like to do?
34. How is your village the best place to do the things you need to do?
35. Have you thought about living outside of your village when you are an adult or have you never thought of that? Why or why not?
36. How do you want to help others in your village?
37. How is your village important to you?
38. What types of jobs can people do in your village?
39. Does your whole family live in your village?
40. Do all of your friends live in your village?
41. Why do you want to help the environment in your village?
42. Can you describe the environment in your village?
43. What is your vision of a happy and successful life? What do you want in your future?

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